	, O Chirel	T		
	H2C TH OH			
	o s		1) Saernstrand, B. et al.	
4444	H³C TI OH	AstraZeneca	J Pharmacol Exp Ther 1999, 288(3): 1174.	EP 0463514
1111	OU O	Astrazerieca	1000, 200(0). 1174.	LI 0400514
	CH3 OH		Name: M. et al. 247th	
			Nagai, M. et al. 217th ACS Natl Meet (March	
1112	ĊH₃	Eisaì	21-25, Anaheim) 1999, Abst MEDI 050.	EP 889032
	0 /s/			
			Sadykov, R.F. et al.	
	s o K	Bashkir Medical	Naunyn-Schmied Arch Pharmacol 1998, 358(1,	
1113	CH <sub>3</sub>	University	Suppl. 2): Abst P 52.28.	
	H <sub>3</sub> C <sup>-</sup> O			
	NH			
1114	CH <sub>3</sub>	Gruenenthal		EP 856513
	NANH			
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1115	ĊH <sub>3</sub>	Gruenenthal		EP 856513
	NH			
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1116		Gruenenthal		EP 856513
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1117	NH <sub>2</sub>	Gruenenthal		EP 856513
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1118		Japan Energy		JP 98231297
	NH <sub>2</sub> O → N			
1119	NIII	Japan Energy		JP 98231297
	NH <sub>2</sub> O- <sub>N</sub> + → N			
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4420		Japan Energy		JP 98231297
1120	NH <sub>2</sub>	Capan Lilety		- COLOTEO
	N T CI			
1121	<u> </u>	Japan Energy	L	JP 98231297

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1122	NH <sub>2</sub> N N N F F	_		
1122	0	Japan Energy	<del> </del>	JP 98231297
1123	NH <sub>2</sub> O-CH <sub>3</sub>	Celgene	1) Moreira, A.L. et al. J Neuro-Oncol 1999, 43(2): 109.	US 5463063
1124	NH NH	Celgene		
	0 0	Ceigene	ļ	US 5874448
1125	NH NH	Celgene		US 5874448
	F o			00 0074440
1126	F NH NH	Celgene		US 5874448
1127	H <sub>2</sub> N NH NH	Celgene		US 5874448
1128	H <sub>2</sub> N .HCI	Celgene		US 5874448
1129	CH <sub>3</sub> OH	Eisaì		
				EP 889032
1130	L L L L L L L L L L L L L L L L L L L	Merck & Co.		WO 9909984
1131	H <sub>3</sub> C. I <sub>N</sub> CN N	Merck & Co.		NO 9909984
1132	N CHEH3	Merck & Co.		NO 9909984

1133	0 0-сн3	Merck & Co.		WO 9909984
1134	O. 5:0 H <sub>2</sub> N O CH <sub>3</sub>			
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1135	N N N N N N N N N N N N N N N N N N N	Hokuriku		JP 99080156
1136	HO CH <sub>3</sub>	Hokuriku		
	H <sup>3</sup> C H CH <sup>3</sup>	PIOKUTIKU		JP 99080156
1137	H <sub>2</sub> N N NH <sub>2</sub>	Hokuriku		JP 99080156
1138	CH <sub>3</sub>	Hokuriku		JP 99080156
1139	H OH CN	SSP		
1140	O OH	SSP	,	CA 2255337
1141		SSP		
1142	E N. N. E E		Madar, D. et al. 222nd ACS Natl Meet (Aug 26- 30, Chicago) 2001, Abst MEDI 7.	CA 2255337 EP 1068187
1143	CH <sub>2</sub> CH <sub>3</sub>	Active Biotech		WO 9955678
			<del></del>	00000.0

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	H <sub>2</sub> V CH <sub>3</sub>	1	1) Gesser, B. et al. Proc Natl Acad Sci USA 1997,	
1144		Amersham	94(26): 14620.	WO 9601318
	H <sup>3</sup> C, N, N			
1145	Н	Kowa		WO 9944995
	H <sub>3</sub> C N O			VVO 3944333
1146	у н	Kowa		WO 9944995
	H <sub>3</sub> C O NH O CI			
1147		Kowa		WO 9944995
	H <sub>2</sub> C(CH <sub>2</sub> ) <sub>10</sub> CH <sub>3</sub> Chiral C			
1148		OM Pharma		WO 0000462
	H <sub>3</sub> C(CH <sub>2</sub> ) <sub>10</sub> OH			
1149		OM Pharma	!	WO 0000462
1150	CI O Chiral OH OH	Ono		WO 0003980
1151	O Chiral OH OH OCH <sub>3</sub>	Ono		<i>N</i> O 0003980
1152	O Chiral OH OH OH	Ono		NO 0003980
	Chiral OH			
1153		Ono	<u></u>	VO 0003980
1154	O CH <sub>3</sub> HO O CH <sub>3</sub>	Ono		VO 0003980
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	OH CH <sub>3</sub>			
1155	но бн	Ono		WO 0003980
	O Chiral OH			
	O-CH <sub>3</sub>		ļ	
1156	но он	Ono		WO 0003980
	H <sub>2</sub> N CH <sub>2</sub> N OH OH OH OH			
1157		University of Bristol		WO 0014114
1158	CH <sub>3</sub> OH	Eisai	Hibi, S. et al. Bioorg Med Chem Lett 2000, 10(7): 623.	EP 0889032
1100	N, OH	Lisai	1023.	EP 0609032
4450				
1159	N-OHO-CH3	Janssen		WO 0021959
1160		Janssen		WO 0021959
1161	N OH F	Janssen		WO 0021959
1162	N-OH-CH <sub>3</sub>	Janssen		WO 0021959
1163	H <sub>3</sub> C O OH CH <sub>3</sub>			
1103	ПС СП	Fujisawa		WO 0021979
1164	S CH <sub>3</sub>	Abbott	1) Liu, G. et al. 220th ACS Natl Meet (Aug 20- 24, Washington DC) 2000, Abst MEDI 171.	US 6110922
	Ale His Cly Nel The Ser  Pro Ale Pro Aug The Aep Pro Ale  Cly Sort H. And Pro Pro Ale  Cly Sort H. Ch,  HO Cot			
1165	Šu Č.,	Cancer Research UK		WO 0052046

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	The Ser Ala Pio Aspt			
1166_	Thr Ala Pzo Pro Ala QH	Cancer Research UK		WO 0052046
	HO N CH.			
	Val Gly His Na O, CH <sub>3</sub> Thr Ser Ala Pro AspN HO			
	Sar Gly Pro Ala Pro Arg			
1167	Thr Ala Pro Pro Ala	Cancer Research UK		WO 0052046
	Chiral			
	OH			
	Br			İ
1168	HQ Q N=/	Southern Research Institute		WO 0112197
	Chiral			WO 0112197
	S s			
	HO O'NH <sub>2</sub>			
1169	, ° C	Southern Research Institute	ł	
	H /S-N	institute		WO 0112197
	F. N. J. N.			
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1170	F F			
7110	ĺ N	Abbott Labs.		EP 1068187
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4474				· i
1171		Abbott	<del> </del>	EP 1068187
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1172		Abbott		EP 1068187
	H³C OH O			
	H <sub>3</sub> C [] []	Ì	Spears, G. et al. 21st	
	↑ `N `O		ISvmp Med Chem (Nov	
1173		Fujisawa	28-30, Kyoto) 2001, Abst 2P-29.	
	Val His Phe Phe Arg Asn lle			
i	Line City Coll life			}
	Pro Thr Arg Ala Thr Val			
1174		Austin Research Institute	Tselios, T. et al. J Med Chem 2002, 45(2): 275.	
	Ho Son No ch, Ha Ha		,(2), 2.10.	
Ì	His Control of the Ha			,
ĺ	He has a he had all and a			
1175	Signal Contraction of the Contra	Eukarion		WO 0204454
	O→OH			WO 0204454
ļ	OH		1) Riggs-Sauthier, J.A.	
	HONNIN		et al. 224th ACS Natl Meet (Aug 18-22,	
1176	но		Boston) 2002, Abst	j
		Nobex	MEDI 305.	WO 0218324

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	H C CH <sub>eH</sub> Chiral			
	CH <sub>3</sub>			
	HO-			
	HO-CO			
1177		Tularik		WO 0238107
	ÇH <sub>3</sub> Chiral			WO 0230107
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	,ooh h³c√ch.			
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	HO-(O-) " Ö Ö WH2			
1178	0	Tularik		WO 0238107
	H.C. CH <sub>SH</sub> Chiral			
	HO-O CH <sub>3</sub>			
	HO-OH-OCI			
1179		Tularik		WO 0238107
	H <sub>3</sub> C CHeH <sub>2</sub> CH			
	CH <sub>3</sub>			
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1180		Tularik		140 0000407
	OH	TAIGHT		WO 0238107
	OH Chiral			
	HO—OOH O CH <sub>3</sub>			
	HO-CO			
1181		Tularik	······································	WO 0238107
	H <sub>3</sub> C   CH <sub>3</sub> Chiral			
	HO—OOH O30 CH <sub>3</sub>			
ķ.				
	HO-CO			
1182		Tularik		WO 0238107
	Chiral			
	,оон № СН3			
	HO			
	HO-CO-CH <sub>3</sub>			
1183	Ŭ	Tularik		WO 0238107
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1184	***************************************	Tularik		WO 0238107
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1185		Tularik		WO 0238107
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1186	Br ÇcH <sub>3</sub>	Sanofi-Synthelabo		WO 0242269
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1187	H <sub>r</sub> 'CH <sub>3</sub> CH <sub>3</sub>	Sanofi-Synthelabo		WO 0242269
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	Br O's'CH <sup>3</sup>			
1188	Н Ста	Sanofi-Synthelabo	WO 0242269	
	F F F			
1189	CI N O'SE'O	Sanofi-Synthelabo	WO 0242269	
	O CH <sub>3</sub>		1	
1190	CI NOSCO NSCCH3	Sanofi-Synthelabo	WO 0242269	
1191	CI CI CI CI CH <sub>3</sub>	Sanofi-Synthelabo	WO 0242269	
1192	CI CH <sub>3</sub>			
1193	H <sub>3</sub> C CI CH <sub>3</sub>	Sanofi-Synthelabo	WO 0242269	
	CI CH <sub>3</sub> CH <sub>3</sub>	Sanofi-Synthelabo	WO 0242269	
1194	OH O Chiral	Sanofi-Synthelabo	WO 0242269	
1195	ON NO CH <sub>3</sub>	Cell Therapeutics	WO 0268421	
	H <sub>3</sub> C N N N N Chiral			
1196	ĈH₃	Cell Therapeutics	WO 0268421	

## **Table 35 Continued**

Compound #	Structure	Source	Literature Reference	Patent Number
	NH			
	N N		!	
1197	ch,	Sumitomo Pharmaceuticals		EP 248399
		- Macoundary		240099
	ÇH₃			
1198	S CH <sub>3</sub>	Associate Discourse		
1190		Aventis Pharma	<u> </u>	EP 248734
	_\$\$			1
	F N N CH <sub>3</sub>	Sumitomo		
1199		Pharmaceuticals		EP 248399
	N-0		j	
	F NH <sub>2</sub>	Sumitomo		
1200	ĊH₃	Pharmaceuticals		EP 248399
	O NH <sub>2</sub>		i	
	Ċн <sub>3</sub>	0		
1201		Sumitomo Pharmaceuticals		EP 248399
	O-N N NH <sub>2</sub>			
	ĊH₃			į
1202		Sumitomo Pharmaceuticals		EP 248399
	NO-N N-CH3			
	HO, N, CH3			
1203		Sumitomo Pharmaceuticals		EP 248399
	N [] 2-N			
	HO N NH <sub>2</sub>			
1204		Sumitomo Pharmaceuticals		EP 248399
	9-й			
	O CH <sub>3</sub> CH <sub>3</sub>	ĺ		
1205		Sumitomo Pharmaceuticals		EP 248399
				LI 240333
1206		Sumitomo		
1206		Pharmaceuticals	,	EP 248399

	CH <sub>3</sub>			
1207	O CH <sub>3</sub>	Aventis Pharma		EP 248734
	O CH <sub>3</sub>			
	S CH <sub>3</sub>			
1000	C			
1208	O CH <sub>3</sub> CH <sub>3</sub>	Aventis Pharma		EP 248734
	N CH <sub>3</sub>			
	F			
1209	О СН —	Aventis Pharma		EP 248734
	O CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub>			
	O CH <sub>3</sub>			
1210		Aventis Pharma		EP 248734
	O CH <sub>3</sub> CH <sub>3</sub>			
	S CH <sub>3</sub>			
1211		Aventis Pharma	4	EP 248734
		A VOINIOT MAINING		L1 270707
	S CH <sub>3</sub>	,		
1010	NO <sub>2</sub>			
1212	9	Aventis Pharma	M194-2-5	EP 248734
,	HN			
	H <sub>2</sub> N N N S			
1213	H <sub>3</sub> C(	Pfizer		AU 8783281
	0			
1214	H₃Ć ĊН₃	Harbor Branch Found.	r was the co	US 4755529
i	ÇH₃ Q Ç <sup>™</sup> O ÇH₃			
	O'CH3			
1215	CH <sub>3</sub>	Roche Bioscience		AU 8782540
	H <sub>3</sub> C			
	O CH <sub>3</sub>			
	CH <sub>3</sub> CH <sub>3</sub>	Dealer Birth		
1216	н,с↓Сн,	Roche Bioscience		AU 8782540
	Q O CH,			
	O-CH <sub>3</sub>			
1217	ċн₃	Roche Bioscience		AU 8782540

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	0 CH <sub>3</sub>			
	O-CH, I			
1218	ĊH <sub>3</sub>	Roche Bioscience		AU 8782540
	8.cH <sup>3</sup>			
1219	H <sub>3</sub> C-N O-CH <sub>3</sub>	Novartis		EP 296110
	OH O OH Chiral			
	H <sub>2</sub> C O' NH OH		(1)	ļ
	H <sub>2</sub> C CH <sub>3</sub>		1) Lam, C. et al. Antimicrob Agents	
1220	őн	Novartis	Chemother 1991, 35(3): 500.	AU 8822785
	Z.N			7.0 0022.700
	H.O.			
	CI CI			
1221	H <sub>3</sub> C N CH <sub>3</sub>	Schering-Plough		EP 318214
	HO Chiral	- Concring-Frought		EF 310214
	H <sup>2</sup> C OHOH			
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1222	H <sub>3</sub> C N	Novartis		
	HO Chiral	Novarus	*	AU 8822785
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1223	H <sub>3</sub> C	N/		
1220	O H	Novartis		AU 8822785
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1224	Christ	Novartis	······································	EP 296110
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1225	Ö H Chiral	Novartis	***	EP 296110
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1226	H <sup>2</sup> C. <sub>M</sub> NH <sup>2</sup>	Novartis		EP 296110
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1227	ĊH <sub>3</sub>	Schering-Plough		EP 318214
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	CH <sub>2</sub>			
1228	но фон	_eo	ļ	WO 8910351
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1229  HO CH,  CH,  CH,  CH,  CH,  CH,  CH,  CH,		CU			
1230  Ho CH <sub>3</sub> CH <sub>3</sub> CH <sub>4</sub> CH <sub>3</sub> CH <sub>4</sub>		H <sub>2</sub> C <sub>1</sub> , Chyol OH <sub>C</sub> H <sub>3</sub> Chyol CH <sub>3</sub>			
1230  HCCH_CH HCCH CH HCCH CH CH HCCH CH CH CH CH C		H CH <sub>2</sub>			
1230 HO OH Leo WO 8910351  1231 HO OH Leo WO 8910351  1232 HO OH Leo WO 8910351  1232 HO OH Leo WO 8910351	1229		Leo		WO 8910351
1230  Ho CH <sub>2</sub> OH  Leo  WO 8910351  WO 8910351  1231  Ho CH <sub>3</sub> CH <sub>4</sub> CH <sub>5</sub> CH <sub>5</sub> CH <sub>6</sub> CH <sub>5</sub> CH <sub>7</sub> CH <sub>8</sub> CH <sub></sub>		CH <sup>O</sup> H CH <sup>O</sup> H			
1230  HO, OH  Leo  WO 8910351  WO 8910351  1231  HO, OH  Leo  WO 8910351  WO 8910351					1
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1265	Q Chiral	SPA	-	EP 421074
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1266	OH OH Chris	SPA		EP 421074
1267	H <sub>2</sub> N H H H O CH <sub>3</sub>	SPA		EP 421074
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1275	O,CH3	Aventis Pharma		EP 476658
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1278	CH <sub>3</sub>	Aventis Pharma		EP 476658
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1279		Aventis Pharma		EP 476658
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1283	المراب (	Merck & Co.		EP 480713

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	, Ch		Soc Jpn (March 29-31, Osaka) 1993, Abst 30C0	;
1287	CH <sub>3</sub>	Kyowa Hakko	13-1 .	EP 505058
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1000	NH <sub>2</sub>	Ĺ	Chem Pharm Bull 1993,	
1288	O OH CH Chiral	Fujisawa	41(5): 894.	AU 8783152
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1289	о≁он	Wyeth		US 5312831
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1292	O, N	Cell Therapeutics		WO 9416704
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1293		Immunex	July 21.	WO 9506031
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1294		Cell Therapeutics		WO 9416704

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1302	ОН	GlaxoSmithKline	WO 9504734
1303		Abbott GmbH	WO 9500493
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1311	CI CH <sub>3</sub>	Abbott GmbH	WO 9500493
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1313	CI <sup>2</sup> V	Abbott GmbH	WO 9500493
1314	H <sub>3</sub> C. NH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> Chiral	Sanofi-Synthelabo	EP 644197
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1315	H <sub>3</sub> C N H <sub>2</sub> NH <sub>2</sub>	Sanofi-Synthelabo	CA 2125021
1316	<u> </u>	GlaxoSmithKline	WO 9504734

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1321	O-CH3	GlaxoSmithKline		WO 9504734
1322	CI S S	Japan Tobacco		JP 95002779
1022	OH	Japan Tobacco		JF 95002119
1323	CH <sub>3</sub> H OH	Pharmacia	1) Gozzi, P. et al. J Pharmacol Exp Ther 1999, 291(1): 199.	JP 1995501330
1324	Chiral Chiral	Sanofi-Synthelabo		EP 644197
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1325	N O D O CH3	Sanofi-Synthelabo		EP 644197
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1332  Sanofi-Synthelabo  CA 2125021  1333  Sanofi-Synthelabo  CA 2125021  1334  H <sub>2</sub> C O <sub>1</sub> O <sub>1</sub> O <sub>1</sub> O <sub>1</sub> O <sub>1</sub> O <sub>1</sub> O <sub>1</sub> O <sub>1</sub>	1331		Sanofi-Synthelabo	CA 2125021
1333  Sanofi-Synthelabo  CA 2125021  1334  Ho  CH  CH  CH  CH  Lilly  WO 9517382  High Chiral  High Chiral  High Chiral  CH  WO 9517382  Aventis Pharma  WO 9520578  High Chiral  High Chiral  WO 9520578  High Chiral  High Chiral  WO 9522548  WO 9522548		I L CH.		
1333  Sanofi-Synthelabo  CA 2125021  1334  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C-O  H <sub>3</sub> C	1332	CI	Sanofi-Synthelabo	CA 2125021
1334  H <sub>3</sub> C <sup>-</sup> O <sub>-</sub> O <sub>-</sub> CH <sub>3</sub> OH Lilly  H <sub>3</sub> C <sup>-</sup> O <sub>-</sub> CH <sub>3</sub> OH NH <sub>2</sub> H <sub>3</sub> C <sup>-</sup> O <sub>-</sub> CH <sub>3</sub> OH NH <sub>2</sub> H <sub>3</sub> C <sup>-</sup> O <sub>-</sub> CH <sub>3</sub> OH NH <sub>2</sub> H <sub>3</sub> C <sup>-</sup> O <sub>-</sub> CH <sub>3</sub> OH NH <sub>2</sub> WO 9518610  Aventis Pharma  WO 9520578  H <sub>4</sub> C <sup>-</sup> O <sub>-</sub> CH <sub>3</sub> OH NH <sub>2</sub> CH <sub>3</sub> OH NH <sub>2</sub> CH <sub>3</sub> OH NH <sub>2</sub> CH <sub>3</sub> OH NH <sub>2</sub> CH <sub>3</sub> OH NH <sub>2</sub> CH <sub>3</sub> OH NH <sub>2</sub> CH <sub>3</sub> OH NH <sub>2</sub> CH <sub>3</sub> OH NH <sub>2</sub> CH <sub>3</sub> OH NH <sub>2</sub> CH <sub>3</sub> OH NH <sub>2</sub> CH <sub>3</sub> OH NH <sub>2</sub> CH <sub>3</sub> OH NH <sub>2</sub> CH <sub>3</sub> OH NH <sub>2</sub> CH <sub>3</sub> OH NH <sub>2</sub> CH 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1335  H <sub>3</sub> C  O <sub>2</sub> C  CH <sub>3</sub> Millennium  WO 9518610  WO 9520578  Aventis Pharma  WO 9520578  1337  Cell Therapeutics  WO 9522546	1334	но	Lilly	
1336  Aventis Pharma  WO 9520578  H <sub>3</sub> C  H <sub>3</sub> C  H <sub>4</sub> C  CH <sub>3</sub> Cell Therapeutics  WO 9522546	1335		Millennium	WO 9518610
H <sub>3</sub> C Cell Therapeutics WO 9522546				
1337 Cell Therapeutics WO 9522546	1336	5.13	Aventis Pharma	WO 9520578
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HO CH <sub>3</sub>	1337		Cell Therapeutics	WO 9522546
1338 CH <sub>3</sub> Lilly WO 9517382		HO CH <sub>3</sub>		
	1338	`СН,	Lilly	WO 9517382

1339	но он сін	Lilly	WO 9517382
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1340	OH CH <sub>3</sub>	Lilly	WO 9517382
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1341	HO OH OH	Lilly	WO 9517382
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1342	но	Lilly	WO 9517382
1343	H³C'O'CH³	Lilly	WO 9517382
1344	H <sub>3</sub> C-O-CH <sub>3</sub>	Lilly	WO 9517382
	O N CH <sub>3</sub>		
1345	H <sub>3</sub> C <sub>1</sub> O CH <sub>3</sub>	Liliy	WO 9517382
10-10	CH <sub>3</sub> CH <sub>3</sub>	Carry	We down add
	H <sub>3</sub> C-CH <sub>3</sub>		
1346	O CH <sub>3</sub>	Lilly	WO 9517382
	HC T		
1347	O,CH <sub>3</sub>	Lilly	WO 9517382
	H <sub>3</sub> C O CH <sub>3</sub> O CH <sub>3</sub> O		
1348	H <sub>3</sub> C <sup>O</sup> O <sup>S</sup> S CH <sub>3</sub>	CytoMed	WO 9518610
	H <sub>3</sub> C. O CH <sub>3</sub>		
1349	H <sub>3</sub> C,O	CytoMed	WO 9518610

	H <sub>3</sub> C'O CH <sub>3</sub>		
	H <sub>3</sub> C O O S CH <sub>3</sub>		
1350		CytoMed	WO 9518610
	H <sub>3</sub> C O CH <sub>3</sub> O CH <sub>3</sub> O CH <sub>3</sub>		
1351		CytoMed	WO 9518610
1352	H <sub>3</sub> C, O CH <sub>3</sub>	CytoMed	WO 9518610
	H <sub>3</sub> C <sub>2</sub> O CH <sub>3</sub> CH <sub>3</sub>		
1353		CytoMed	WO 9518610
	H <sub>3</sub> C.O CH <sub>3</sub>		
1354		CytoMed	WO 9518610
1355	H <sub>3</sub> C O O O CH <sub>3</sub>	CytoMed	WO 9518610
1356	H <sub>3</sub> C <sup>-</sup> O CH <sub>3</sub>	CytoMed	WO 9518610
1357	H <sub>3</sub> C O CH <sub>3</sub> N OH	CytoMed	WO 9518610
1358	H <sub>3</sub> C O CH <sub>3</sub> O CH <sub>3</sub> O CH <sub>3</sub> O CH <sub>3</sub>	CytoMed	WO 9518610
1336	H <sub>3</sub> C'S.0	Cytomed	44.0 90 100 10
1359	H <sub>3</sub> C O CH <sub>3</sub>	CytoMed	WO 9518610
	$\begin{array}{c} H_3C \\ H_3C \\ \end{array} \\ \begin{array}{c} O \\ \end{array} \\ \\ \begin{array}{c} O \\ \end{array} \\ \begin{array}{c}$		
1360		CytoMed	WO 9518610

1372	CI S	Japan Tobacco	JP 95002779
	ÇH <sub>3</sub>	- Capan Tobacco	 ar 95002119
1373	CI S CH <sub>3</sub>	Japan Tobacco	JP 95002779
1974	CI NO S		
1374	Cl	Japan Tobacco	 JP 95002779
	CH <sub>3</sub>		
1375		Aventis Pharma	 WO 9520578
1376	CH <sub>3</sub>	Aventis Pharma	WO 9520578
	O <sub>CI</sub> N		
1377	P F	Aventis Pharma	WO 9520578
1378	P F	Aventis Pharma	WO 9520578
1379	CI Chiral Chiral	Sanofi-Synthelabo	WO 9526958
10/0	Br	Canon-Cymniciau0	 *** O 9020900
1380	H <sub>3</sub> C O CH <sub>3</sub>	Cell Therapeutics	WO 9522546
4004	H <sub>3</sub> C O CH <sub>3</sub>		
1381	HO CH <sub>3</sub>	Cell Therapeutics	WO 9522546
1382	CH <sub>3</sub>	Cell Therapeutics	 WO 9522546

r			
	H <sub>3</sub> C N N CH <sub>3</sub>		
1383		Cell Therapeutics	WO 9522546
	H <sub>3</sub> C O CH <sub>3</sub> H O CH <sub>3</sub>		
1384		Cell Therapeutics	WO 9522546
	H <sub>3</sub> C CH <sub>3</sub>	,	(8)
1385	<b>∇</b> Chire!	Cell Therapeutics	WO 9522546
	H,C,C,H		
1386	HO OH H <sub>3</sub> C CH <sub>3</sub> Chiel	Duphar	EP 664287
1387	H <sub>3</sub> C, CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> H CH <sub>2</sub>	Duphar	EP 664287
	OHChival		
1388	CH <sub>2</sub> HO Christ	Duphar	EP 664287
1389	H,Cr, CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> HO CH <sub>2</sub>	Duphar	EP 664287
1390	Chrel  H, Cr., CH3 CH3 H CH3 H OH	Duphar	EP 664287
1390	CH <sub>2</sub> Criteral  H <sub>3</sub> C CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub> CH 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<sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N H <sub>2</sub> N 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1437	~3 2 M	Pharmacia	WO 9745409

Γ			
	OH Chiral NH <sub>2</sub> NH <sub>2</sub>		
1438	0	LEK	EP 477912
1420	H <sub>3</sub> C N NH <sub>2</sub> NH <sub>2</sub>		
1439		AstraZeneca	WO 9828275
1440	H <sub>3</sub> C N OO BOH	AstraZeneca	W0 00000
	0	Astrazerieca	WO 9828275
1441	H <sub>3</sub> C N N N N	AstraZeneca	WO 9828270
1442	H <sub>3</sub> C N N N N N N N N N N N N N N N N N N N	AstraZeneca	
,,,,=	0	Astrazerieca	WO 9828270
1443	H <sub>3</sub> C N N N N N N N N N N N N N N N N N N N	AstraZeneca	WO 9828270
1444	H <sub>2</sub> C N N N N N N N N N N N N N N N N N N N	AstraZeneca	WO 9828270
1445		AstraZeneca	WO 9828270
1446	H <sub>3</sub> C NH	AstraZeneca	WO 9828270
1447	H <sub>2</sub> C NH	AstraZeneca	WO 9828270
1448	H <sub>3</sub> C N N	AstraZeneca	
	I	TOTALGITECA	WO 9828270

	T			
	H <sub>3</sub> C N N N			
1449		AstraZeneca		WO 9828270
	H <sub>3</sub> C~N	7 100 425 110 50		WO 9828270
	H <sub>3</sub> C N			
1450	H <sub>3</sub> C	AstraZeneca	<del>-</del>	WO 9828270
	H <sub>3</sub> C N NH			
1451		AstraZeneca		WO 9828270
	H <sub>3</sub> C N N N N			
1452		AstraZeneca	1	WO 9828270
	H <sub>3</sub> C N N N N			WG 00202.10
1453		AstraZeneca	1	
	H <sub>3</sub> C H	Astrazeneca		WO 9828270
	H <sub>3</sub> C N N			
1454		AstraZeneca		WO 9828270
	H <sub>3</sub> C N N N N	*		
1455		AstraZeneca		WO 9828270
	H <sub>3</sub> C \ N \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			WC 3020270
	H <sub>3</sub> C N NH			į
1456		AstraZeneca		WO 9828270
i	H <sub>3</sub> C N S O N N N			
1457				
1701	H³C Vì.S VO ViH	AstraZeneca		WO 9828270
	H <sub>3</sub> C			
1458		AstraZeneca		WO 9828270
	H <sub>3</sub> C OH OH Clinal OH OH OH OH			
1459	H,C OH OCH, O	Daiichi Pharmaceutical	Koiwa, T. et al. J Antibiot 1999, 52(2): 198.	
		I Denomi i marmaceutical	1999, 02(2): 198.	

	Br Cl			
1460	CI	Bristol-Myers Squibb		WO 0244181
	CI			
	, July CI			
1461	Č	Bristol-Myers Squibb		WO 0244181
	Br			
1462				
1402	NC Chiral	Bristol-Myers Squibb		WO 0244181
	N N CI			
1463	cı	Bristol-Myers Squibb		WO 0244181
	NC O CH <sub>3</sub> Chiral			
1464	Ţ	Bristol-Myers Squibb	1	NO 0244181
	Br N N CI			
1465	ĊI	Bristol-Myers Squibb		VO 0244181
1466	CI Chiral	Bristol-Myers Squibb	v	VO 0244181
	N N CI			
1467	ČI Br	Bristol-Myers Squibb		/O 0244181
1468	Ω 1	Bristol-Myers Squibb	w	O 0244181
	Н <sub>С</sub> С Р			
1469	У Н	Gruenenthal	w	O 0290317

## BRIEF DESCRIPTION OF SEQUENCE LISTING

SEQ ID NO:	Description
1	Draft genome assembly from The Genome Science Center in British Colombia,
	Canada of sequence from TOR2 isolate. TOR2_draft_genome_assembly 120403 Release 1
2	CDC SARS-CoV strain sequence. Entire nucleotide sequence (Urbani strain)
3-20	Group-specific coronavirus gene products
	> Feline infectious peritonitis virus (FIPV)
	3/4 = ORF 3b; 5/6 = ORF 3X; 7/8 = ORF 3A
	> Canine coronavirus
	9/10 = ORF 7b; 11/12 = ORF 7a
	> Avian infectious bronchitis virus
	13/14 = ORF 5b; 15/16 = ORF 5a; 17/18 = ORF 3a; 19/20 = ORF 3b
21-520	500 primers for left part
521-1020	500 primers for right part
1021-3520	Forward primers from Table 4
3521-6020	Reverse primers from Table 4
6021-6026	Figure 9 primers
6027-6033	Figure 11 primers
6034-6038	Five primers from http://content.nejm.org/cgi/reprint/NEJMoa030781v2.pdf
6039-6051	PEP1 to PEP13
6052	Extended PEP13
6053-6056	229E human coronavirus sequences
6057-6060	TGV sequences
6061-6064	PEDV sequences
6065-6068	Bovine coronavirus sequences
6069-6071	Murine hepatitis virus sequences
6072-6075	AIBV sequences
6076-6170	Primer sequences (forward)
6171-6265	Primer sequences (reverse)
6266-6304	Primer sequences (forward)
6305-6343	Primer sequences (reverse)
6344-6366	Primer sequences (forward)
6367-6392	Primer sequences (reverse)
6393-6440	Primer sequences (forward) F1-F48
6441-6487	Primer sequences (reverse) R1-R47
6488-6559	Primer sequences
6560-6568	Primer sequences
6569	The nsp2 proteinase (3CL-PRO) sequence in SARS coronavirus
6570-72	The nsp2 proteinase (3CLp) of avian IBV, MHV, and BCoV
6573	Consensus nsp2 proteinases sequence
6574-6577	IG sequences from Figure 18
D3/X	L Expression construct of nSh in nCMVIII
6578 6579	Expression construct of nSh in pCMVIII  Expression construct of nS in pCMVIII
6579	Expression construct of nS in pCMVIII
6579 6580	Expression construct of nS in pCMVIII  Expression construct of nSh ΔTC in pCMVIII
6579 6580 6581	Expression construct of nS in pCMVIII  Expression construct of nSh ΔTC in pCMVIII  Expression construct of nS ΔTC in pCMVIII
6579 6580 6581 6582	Expression construct of nS in pCMVIII  Expression construct of nSh ΔTC in pCMVIII  Expression construct of nS ΔTC in pCMVIII  Expression construct of nS1h in pCMVIII
6579 6580 6581 6582 6583	Expression construct of nS in pCMVIII  Expression construct of nSh ΔTC in pCMVIII  Expression construct of nS ΔTC in pCMVIII  Expression construct of nS1h in pCMVIII  Expression construct of nS1 in pCMVIII
6579 6580 6581 6582 6583 6584-6585	Expression construct of nS in pCMVIII  Expression construct of nSh ΔTC in pCMVIII  Expression construct of nS ΔTC in pCMVIII  Expression construct of nS1h in pCMVIII  Expression construct of nS1 in pCMVIII  Primers for cDNA amplification
6579 6580 6581 6582 6583 6584-6585 6585-6587	Expression construct of nS in pCMVIII  Expression construct of nSh \( \Delta TC \) in pCMVIII  Expression construct of nS \( \Delta TC \) in pCMVIII  Expression construct of nS1h in pCMVIII  Expression construct of nS1 in pCMVIII  Primers for cDNA amplification  Primers for RT-PCR
6579 6580 6581 6582 6583 6584-6585 6585-6587 6588-6809	Expression construct of nS in pCMVIII  Expression construct of nSh ∆TC in pCMVIII  Expression construct of nS ∆TC in pCMVIII  Expression construct of nS1h in pCMVIII  Expression construct of nS1 in pCMVIII  Primers for cDNA amplification  Primers for RT-PCR  Component sequences of Figure 23 (≥4 amino acids)
6579 6580 6581 6582 6583 6584-6585 6585-6587 6588-6809 6810-7179	Expression construct of nS in pCMVIII  Expression construct of nSh ∆TC in pCMVIII  Expression construct of nS ∆TC in pCMVIII  Expression construct of nS1h in pCMVIII  Expression construct of nS1 in pCMVIII  Primers for cDNA amplification  Primers for RT-PCR  Component sequences of Figure 23 (≥4 amino acids)  Component sequences of Figure 24 (≥4 amino acids)
6579 6580 6581 6582 6583 6584-6585 6585-6587 6588-6809 6810-7179 7180-7187	Expression construct of nS in pCMVIII  Expression construct of nSh ∆TC in pCMVIII  Expression construct of nS ∆TC in pCMVIII  Expression construct of nS1h in pCMVIII  Expression construct of nS1 in pCMVIII  Primers for cDNA amplification  Primers for RT-PCR  Component sequences of Figure 23 (≥4 amino acids)  Component sequences of Figure 24 (≥4 amino acids)  N-glycosylation sites within SEQ ID NO: 6039
6579 6580 6581 6582 6583 6584-6585 6585-6587 6588-6809 6810-7179 7180-7187	Expression construct of nS in pCMVIII  Expression construct of nSh ATC in pCMVIII  Expression construct of nS ATC in pCMVIII  Expression construct of nS1h in pCMVIII  Expression construct of nS1 in pCMVIII  Primers for cDNA amplification  Primers for RT-PCR  Component sequences of Figure 23 (≥4 amino acids)  Component sequences of Figure 24 (≥4 amino acids)  N-glycosylation sites within SEQ ID NO: 6039  Component sequences of Figure 25
6579 6580 6581 6582 6583 6584-6585 6585-6587 6588-6809 6810-7179 7180-7187 7188-7189	Expression construct of nS in pCMVIII  Expression construct of nSh ∆TC in pCMVIII  Expression construct of nS ∆TC in pCMVIII  Expression construct of nS1h in pCMVIII  Expression construct of nS1 in pCMVIII  Primers for cDNA amplification  Primers for RT-PCR  Component sequences of Figure 23 (≥4 amino acids)  Component sequences of Figure 24 (≥4 amino acids)  N-glycosylation sites within SEQ ID NO: 6039  Component sequences of Figure 25  Fragment of SEQ ID NO: 7188
6579 6580 6581 6582 6583 6584-6585 6585-6587 6588-6809 6810-7179 7180-7187 7188-7189	Expression construct of nS in pCMVIII  Expression construct of nSh ATC in pCMVIII  Expression construct of nS ATC in pCMVIII  Expression construct of nS1h in pCMVIII  Expression construct of nS1 in pCMVIII  Primers for cDNA amplification  Primers for RT-PCR  Component sequences of Figure 23 (≥4 amino acids)  Component sequences of Figure 24 (≥4 amino acids)  N-glycosylation sites within SEQ ID NO: 6039  Component sequences of Figure 25

7194	Amino acid- 001 1005 COTO ID NO COTO
7194	Amino acids 901-1005 of SEQ ID NO: 6042
7196	Amino acids 1144-1201 of SEQ ID NO: 6042 Amino acids 1144-1196 of SEQ ID NO: 6042
7197-7199	Membrane fusion peptide regions
7200-7206	NadA-based polypeptides
7207-7223	N-glycosylation sites within SEQ ID NO: 6042
7224-7231	Slippage region
7232	
7233-7244	Orf1ab polyprotein
7245-7247	Orf1ab polyproteins
7243-7247	X <sub>2</sub> sequences for SEQ ID NOS 7233-7244
7254	Orflab polyproteins
7255-7271	Zinc binding region 2 site
7272-7291	N-glycosylation sites in SEQ ID NOS: 6040-41,6043,6045-46,6050-51
7292-7293	Polypeptides and polynucleotides
7294-7301	Intergenic sequences
7302-7306	Nucleotides from 5' end of SARSV genome followed by intergenic sequence
7307-7308	NadA constructs
	Fragments of SEQ ID NO: 6042
7309	NadA sequence
7310-7311 7312-7315	NadA leader sequences
7316-7324	Amino acid sequencess from NadA
	PCR primers
7325-7330	Primers
7331	CCACC sequence
7332-7336	3' UTR forward primers
7337-7341	3' UTR reverse primers
7342-7352	3' UTR probes
7353-7362	5' UTR forward primers
7363-7373	5' UTR reverse primers
7374-7385	5' UTR probes
7386	Conserved octanucleotide
7387	Reverse complement of SEQ ID NO: 7293
7388	Intergenic sequence
7389	Poly T
7390	Stem-loop sequence
7391-7392	Poly-glycine linkers
7393	Poly-histidine tag
7394	Nucleocapsid epitope site
7395	Antisense primer
7396-7397	Probes
7398-7399	Antigenic fragments of SEQ ID NO: 6042
7400-7639	T-epitope analysis of SEQ ID NO: 6039
7640-7800	T-epitope analysis of SEQ ID NO: 6040
7801-8040	T-epitope analysis of SEQ ID NO: 6041
8041-8280	T-epitope analysis of SEQ ID NO: 6042
8281-8486	T-epitope analysis of SEQ ID NO: 6043
8487-8665	T-epitope analysis of SEQ ID NO: 6044
8666-8820	T-epitope analysis of SEQ ID NO: 6045
8821-9018	T-epitope analysis of SEQ ID NO: 6046
9019-9131	T-epitope analysis of SEQ ID NO: 6047
9132-9308	T-epitope analysis of SEQ ID NO: 6048
9309-9437	T-epitope analysis of SEQ ID NO: 6049
9438-9538	T-epitope analysis of SEQ ID NO: 6050
9539-9752	T-epitope analysis of SEQ ID NO: 6052
9753-9763	Primers for spike protein amplification, particularly fragments of spike
9764-9765	N-glycosylation sites within SEQ ID NO: 6039
9766-9779	Cleavage products for ORF1ab (Table 10)

9780-9782 9783-9784 9785-9798 9799-9802	Forward primer, reverse primer, probe  Lysine-rich region  Oligonucleotides used for <i>S.cerevisiae</i> expression
9785-9798 9799-9802	Lysine-rich region Oligonucleotides used for S.cerevisiae expression
9799-9802	Oligonucleotides used for S.cerevisiae expression
	Sequences from Figures 65 & 66
9803-9882	Primers for E.coli cloning
9883-9885	BCV nucleotide sequences for Figures 3A, 3B, 3C
9886-9891	BCV amino acid sequences for Figures 4A, 4B, 4C, 4D, 4E, 4F
9892	BCV 5' UTR
9893	BCV 3' UTR
9894-9896	MHV nucleotide sequences for Figures 3A, 3B, 3C
9897-9902	MHV amino acid sequences for Figures 4A, 4B, 4C, 4D, 4E, 4F
9903-9904	AIBV nucleotide sequences for Figures 3A, 3B
9905-9909	AIBV amino acid sequences for Figures 4A, 4B, 4D, 4E, 4F
9910	AIBV 5' UTR
9911	AIBV 3' UTR
9912-9913	HOBMPRO, HOBHEGA nucleotide sequences for Figures 3B, 3C
9914-9918	Human CoV amino acid sequences for Figures 4A, 4B, 4C, 4E, 4F
9919	HCoV-OC43 5' UTR
9920	HCoV-OC43 3' UTR
9921-9923	pCMVKm2 vectors
9924-9926	Codon-optimised N, M and E sequences
9927	BNI-1
9928-9959	Constituent amino acid sequences ≥4aa inferred from SEQ ID NO: 9927
9960	ORF1ab variant
9961	ORF1a variant
9962	Spike variant
9963	Membrane variant
9964	Nucleocapsid variant
9965-9966	Short ORFs
9967	FRA complete genome

#### **CLAIMS**

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- 1. An isolated polypeptide of the SARS virus.
- 2. The polypeptide of claim 1, wherein the polypeptide is a Spike (S) polypeptide, an Env (E) polypeptide, a Membrane (M) polypeptide, a hemagglutinin-esterase polypeptide (HE), a nucleocapsid (N) polypeptide, a ORF1a polypeptide, a ORF1ab polypeptide, a proteolytic fragment of a ORF1a polypeptide.
- 3. The polypeptide of claim 1, wherein the polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO<sup>s</sup>: 6039, 7232, 9766, 9767, 9768, 9769, 9770, 9771, 9772, 9773, 9774, 9775, 9776, 9777, 9778, 9779, 6042, 6043, 6044, 6045, 6046, 6047, 6048, 6049, 6050 or 6052.
- 4. The polypeptide of claim 1, wherein the polypeptide comprises an amino acid sequence having >75% sequence identity to an amino acid sequence selected from the group consisting of SEQ ID NO<sup>S</sup>: 6042, 6043, 6044, 6045, 6046, 6047, 6048, 6049, 6050, 6052, 9766, 9767, 9768, 9769, 9770, 9771, 9772, 9773, 9774, 9775, 9776, 9777, 9778, 9779, 9997, 9998, 10149, 10316, 10338, 10339, 10340, 10341, 10342, 10532, 10533, 10571, 10572, 10573, 10574, 10575, 10576, 10577, 10578, 10579, 11561, 11562, 11618, 11619, 11620, 11627, 11630, 11633 & 11636.
- 5. The polypeptide of claim 1, wherein the polypeptide comprises a fragment of at least 10 consecutive amino acids of an amino acid sequence selected from the group consisting of SEQ ID NO<sup>S</sup>: 6042, 6043, 6044, 6045, 6046, 6047, 6048, 6049, 6050, 6052, 9766, 9767, 9768, 9769, 9770, 9771, 9772, 9773, 9774, 9775, 9776, 9777, 9778, 9779, 9997, 9998, 10149, 10316, 10338, 10339, 10340, 10341, 10342, 10532, 10533, 10571, 10572, 10573, 10574, 10575, 10576, 10577, 10578, 10579, 11552, 11561, 11562, 11618, 11619, 11620, 11627, 11630, 11633 & 11636.
- A polypeptide comprising an amino acid sequence having >80% sequence identity to an amino acid sequence selected from the group consisting of SEQ ID NO<sup>S</sup>: 6042, 6043, 6044, 6045, 6046, 6047, 6048, 6049, 6050, 6052, 9766, 9767, 9768, 9769, 9770, 9771, 9772, 9773, 9774, 9775, 9776, 9777, 9778, 9779, 9997, 9998, 10149, 10316, 10338, 10339, 10340, 10341, 10342, 10532, 10533, 10571, 10572, 10573, 10574, 10575, 10576, 10577, 10578, 10579, 11552, 11561, 11562, 11618, 11619, 11620, 11627, 11630, 11633 & 11636.
- 7. A polypeptide comprising an amino acid sequence that comprises a fragment of at least 10 consecutive amino acids of an amino acid sequence selected from the group consisting SEQ ID NO<sup>S</sup>: 6042, 6043, 6044, 6045, 6046, 6047, 6048, 6049, 6050, 6052, 9766, 9767, 9768, 9769, 9770, 9771, 9772, 9773, 9774, 9775, 9776, 9777, 9778, 9779, 9997, 9998, 10149, 10316, 10338, 10339, 10340, 10341, 10342, 10532, 10533, 10571, 10572, 10573, 10574, 10575, 10576, 10577, 10578, 10579, 11552, 11561, 11562, 11618, 11619, 11620, 11627, 11630, 11633 & 11636.

8. A polypeptide comprising an amino acid sequence having >80% sequence identity to SEQ ID NO: 6042, and/or comprising an amino acid sequence that comprises a fragment of at least 10 consecutive amino acids of SEQ ID NO: 6042, wherein the polypeptide is in the form of a trimer.

5 9. Nucleic acid encoding the polypeptide of any one of claims 1 to 8.

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- 10. Nucleic acid according to claim 9, comprising a nucleotide sequence selected from the group consisting of SEQ ID NO<sup>S</sup>: 7191, 7273, 7275, 7277, 7279, 7281, 7283, 7285, 7287, 7289, 7291, 7292, 7293, 9968, 10066, 10084, 10299, 10505, 11323, 11563, 11639 & 11640.
- 11. A polynucleotide comprising a nucleotide sequence having >80% sequence identity to the nucleic acid of claim 9 or claim 10.
  - 12. A polynucleotide comprising a fragment of at least 10 consecutive nucleotides of the nucleic acid of claim 9 or claim 10.
  - 13. Antibody that recognizes the polypeptide of any one of claim 1 to 8.
- 14. The antibody of claim 13, wherein said antibody recognizes the polypeptide comprising the amino acid sequence of SEQ ID NO: 6042 or a fragment thereof.
  - 15. The antibody of claim 14, wherein said antibody recognizes the polypeptide comprising the amino acid sequence of SEQ ID NO: 6042 or a fragment thereof in trimeric form.
  - 16. The antibody of claim 13, wherein the antibody is a monoclonal antibody,
  - 17. The antibody of claim 13, wherein the antibody is a human antibody,
- 20 18. An immunoassay for detecting a SARS virus antigen in a sample, comprising the step of contacting the sample with the antibody of any one of claims 13 to 17.
  - 19. An immunoassay for detecting an antibody against a SARS virus antigen in a sample, comprising the step of contacting the sample with the polypeptide of any one of claims 1 to 8.
- 20. A method of detecting an antibody against a SARS virus antigen in a sample comprising contacting said sample with the polypeptide of any one of claims 1 to 8, under conditions suitable for binding said polypeptide to said antibody, if present, and detecting the binding of said polypeptide to said antibody.
  - 21. A method for detecting a SARS virus antigen in a sample comprising contacting said sample with the antibody of any one of claims 13 to 17, under conditions suitable for binding said antibody to said antigen, if present, and detecting the binding of said antibody to said antigen.

22. A vaccine for the treatment or prevention of severe acute respiratory syndrome (SARS), comprising an inactivated SARS virus, a killed SARS virus, an attenuated SARS virus, a split SARS virus preparation, or at least one purified SARS virus antigens.

- 23. The vaccine of claim 22, comprising a purified polypeptide according to any one of claims 1 to 8.
- 24. The vaccine of claim 22 or claim 23, wherein the antigen is a purified SARS virus antigen in the form of a VLP.
- 25. The vaccine of any one of claims 22 to 24, further comprising an adjuvant.
- 26. The vaccine of claim 25, wherein the adjuvant is an aluminium salt or is MF59.
- 10 27. The vaccine of any one of claims 22 to 26, comprising more than one SARS virus antigen.
  - 28. The vaccine of claim 27, wherein the antigens are selected from S, E, N and M.
  - 29. The vaccine of claim 22, comprising an inactivated SARS virus.

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- 30. The vaccine of claim 29, wherein said virus is inactivated by chemical or physical means.
- 31. The vaccine of claim 30, wherein said inactivation comprises treatment of the virus with an effective amount of one or more of the following agents selected from the group consisting of detergents, formaldehyde, formalin, β-propriolactone, and UV light.
  - 32. The vaccine of claim 30, wherein said inactivation comprises treatment of the virus with an effective amount of one or more of the following agents selected from the group consisting of methylene blue, psoralen and carboxyfullerene (C60).
  - 33. The vaccine of claim 30, wherein said inactivation comprises treatment of the virus with an effective amount of one or more of the following agents selected from the group consisting of binary ethylamine, acetyl ethyleneimine and gamma irradiation.
  - 34. The vaccine of claim 31, wherein said inactivation comprises treatment with  $\beta$ -propriolactone.
  - 35. The vaccine of claim 34, wherein said  $\beta$ -propriolactone is used at a concentration of 0.01 to 0.5%.
  - 36. The vaccine of claim 34, wherein said  $\beta$ -propriolactone is used at a concentration of 0.5 to 0.2%.
- 30 37. The vaccine of claim 34, wherein said β-propriolactone is used at a concentration of 0.025 to 0.1%.

38. A method of inactivating SARS virus comprising exposing the virus to an inactivation agent for 12 to 24 hours at refrigeration temperatures followed hydrolysis of any residual inactivating agent by elevating the temperature for three hours.

- 39. The method of claim 38, wherein the inactivation agent is  $\beta$ -propriolactone.
- 5 40. The method of claim 38, wherein the refrigeration temperature is between 0°C and 8°C.
  - 41. The method of claim 38, wherein the elevated temperature is between 33°C and 41°C.
  - 42. A method for making an inactivated SARS vaccine comprising:
    - a. innoculating a mammalian cell culture with SARS virus;
    - b. cultivating the infected cells;

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- c. harvesting SARS virus containing supernatant;
  - d. inactivating the SARS virus; and
  - e. purifying the inactivated SARS virus.
- 43. The method of claim 42, wherein said mammalian cell culture is derived from one or more of the cell types selected from the group consisting of fibroblast cells, endothelial cells, hepatocytes, keratinocytes, immune cells, mammary cells, smooth muscle cells, melanocyte cells, neural cells, prostate cells, renal cells, skeletal cells, liver cells, retinoblast cells and stromal cells.
- 44. The method of claim 42, wherein said mammalian cell culture is derived from a cell culture selected from the group consisting of human cells, non-human primate cells, HeLa cells, human diploid cells, fetal rhesus lung cells, human embryonic kidney cells, VERO cells, horse cells, cow cells, sheep cells, dog cells, cat cells or rodent cells.
- 45. The method of claim 42, wherein said mammalian cell culture is derived from VERO cells or fetal rhesus kidney cells.
- 46. The method of claim 42, wherein said mammalian cells are cultured in serum free media.
- 25 47. The method of claim 42, wherein said mammalian cells are cultured in protein free media.
  - 48. The method of claim 42, wherein said inoculating step comprising absorbing the SARS virus onto the cell culture for 60 to 300 minutes.
  - 49. The method of claim 42, wherein said inoculating step is conducted at 25°C to 40°C.
- 50. The method of claim 42, wherein said purification step comprises one or more of the treatments selected from the group consisting of gradient centrifugation, ultracentrifugation, continuous-flow ultracentrifugation, chromatography, polyethylene glycol precipitation, and ammonium sulfate precipitation.

51. The method of claim 42, wherein said purification step comprises one or more of the treatments selected from the group consisting of ultrafiltration and dialfiltration.

- 52. The method of claim 50, wherein said chromatography treatment includes one or more of the chromatography treatments selected from the group consisting of ion exchange chromatography, size exclusion chromatography, and liquid affinity chromatography.
- 53. The method of claim 52, wherein said chromatography treatment includes use of one more chromatographic resins selected from the group consisting of an an anionic resin and a cationic resin.

- 54. The method of claim 52, wherein the ion exchange chromatography treatment includes a first step using a strong anion exchange resin and a second step using a strong cation exchange resin.
  - 55. The method of claim 50, wherein said gradient centrifugation purification step comprises density gradient centrifugation.
- 56. The method of claim 42, wherein said purification step comprises a first step of chromatography purification and a second step of gradient centrifugation.
  - 57. The method of claim 56, wherein said first chromatography purification step comprises liquid affinity chromatography.
  - 58. The method of claim 56, wherein said second gradient centrifugation step comprises density gradient centrifugation.
- 59. A single-stranded oligonucleotide comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS: 21-6020, 6076-6568, 6586-6587, 7292-7301, 7325-7328, 7332-7352, 7353-7385, 10235-10298, 10352-10504, 10580-11322 and 11325-11551.
  - 60. A single-stranded oligonucleotide comprising the complement of the oligonucleotide of claim 59.
- 25 61. The oligonucleotide of claim 59 or claim 60, comprising 10-30 nucleotides.
  - 62. The oligonucleotide of claim 61, comprising the nucleotide sequence of SEQ ID NO: 7292, SEQ ID NO: 7293, the complement of SEQ ID NO: 7292 or the complement of SEQ ID NO: 7293.
- 63. A kit comprising primers for amplifying a template sequence contained within a SARS
  virus nucleic acid target, the kit comprising a first primer and a second primer, wherein the first
  primer comprises a sequence substantially complementary to a portion of said template sequence
  and the second primer comprises a sequence substantially complementary to a portion of the

complement of said template sequence, wherein the sequences within said primers which have substantial complementarity define the termini of the template sequence to be amplified.

- 64. The kit of claim 63, wherein the template sequence is contained within SEQ ID NO: 1 and/or SEQ ID NO: 2.
- 5 65. The kit of claim 63 or claim 64, wherein the first primer comprises a fragment of 8 or more nucleotides of SEQ ID NO: 1, and the second primer comprises a fragment of 8 or more nucleotides of the complement of SEQ ID NO: 1.
  - 66. The kit of claim 63 or claim 64, wherein the first primer comprises a fragment of 8 or more nucleotides of SEQ ID NO: 2, and the second primer comprises a fragment of 8 or more nucleotides of the complement of SEQ ID NO: 2.

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- 67. The kit of claim 63, wherein the first primer is an oligonucleotide according to any one of claims 59 to 62 and the second primer is an oligonucleotide according to any of claims 59 to 62.
- 68. The kit of any one of claims 63 to 67, further comprising a labeled probe that comprises either a fragment of 8 or more nucleotides of SEQ ID NO: 1 and/or SEQ ID NO: 2, or the complement of said fragment, which fragment is located within the template sequence.
- 69. The kit of any one of claims 63 to 68, wherein the first primer and/or the second primer comprises a nucleotide sequence selected from the group consisting of SEQ ID NOS: 21-6020, 6076-6568, 6586-6587, 7292-7301, 7325-7328, 7332-7352, 7353-7385, 10235-10298, 10352-10504, 10580-11322 and 11325-11551.
- 70. The kit of any one of claims 63 to 68, wherein the first primer and/or the second primer comprises the complement of a nucleotide sequence selected from the group consisting of SEQ ID NOS: 21-6020, 6076-6568, 6586-6587, 7292-7301, 7325-7328, 7332-7352, 7353-7385, 10235-10298, 10352-10504, 10580-11322 and 11325-11551.
  - 71. A method of detecting the presence of SARS virus in a sample comprising providing a sample suspected of containing a SARS virus nucleic acid target, amplifying a template sequence contained within said SARS virus nucleic acid target with the kit of any one of claims 63 to 70, and detecting the amplified template sequence, wherein the presence of the amplified template sequence indicates the presence of SARS virus in said sample.
  - 72. The method of claim 71, wherein said amplifying is accomplished using polymerase chain reaction, transcription mediated amplification, reverse transcription PCR, ligase chain reaction, strand displacement amplification or nucleic acid sequence-based amplification.
    - 73. A double-stranded RNA molecule with a length from about 10 to about 30 nucleotides which is able to inactivate the SARS coronavirus in a mammalian cell.

74. The double-stranded RNA of claim 73, wherein the sequence of one of the strands is at least 90% identical to a target sequence, wherein the target sequence is a fragment of SEQ ID NO: 1 and/or SEQ ID NO: 2.

75. The double-stranded RNA of claim 73 or claim 74, wherein the target sequence comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS: 7292, 7293, 7294, 7295, 7296, 7297, 7298, 7299, 7300 and 7301.

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- 76. The double-stranded RNA of any one of claims 73 to 75, comprising at least one modified nucleotide.
- 77. A method for treating a patient suffering from SARS, comprising: administering to the patient a therapeutically effective dose of a molecule of less than 1000 g/mol.
  - 78. The method of claim 77, wherein the molecule has an aromatic region and greater than one heteroatom selected from O, S, or N.
  - 79. A method for treating a patient suffering from SARS, comprising: administering to the patient a therapeutically effective dose of a compound selected from: a nucleoside analog, a peptoid, an oligopeptide, a polypeptide a protease inhibitor, a 3C-like protease inhibitor, a papain-like protease inhibitor, or an inhibitor of an RNA dependent RNA polymerase.
  - 80. A method for treating a patient suffering from SARS, comprising: administering to the patient a steroidal anti-inflammatory drug in combination with at least one antiviral compound.
- 81. A method for treating a patient suffering from SARS, comprising: administering to the patient a therapeutically effective dose of a compound selected from: acyclovir, gancyclovir, vidarabidine, foscamet, cidofovir, amantidine, ribavirin, trifluorothymidine, zidovudine, didanosine, zalcitabine, an antiviral compound listed in Table 1; an antiviral compound listed in Table 2; or an interferon.
  - 82. The method of claim 81, wherein the interferon is an interferon- $\alpha$  or an interferon- $\beta$ .
- 25 83. The method of any one of claims 77 to 82, wherein the molecule or compound is delivered by inhalation.
  - 84. A method of identifying a therapeutically active agent comprising the steps of: (a) contacting a therapeutically active agent with a cell infected with the SARS virus; (b) measuring attenuation of a SARS related enzyme.
- 30 85. A viral vector or particle for *in vivo* delivery of a nucleic acid of claim 9 or claim 10.
  - 86. The viral vector of claim 85, wherein the vector is an adenovirus vector, a poxvirus vector or an alphavirus vector.
  - 87. An alphavirus replicon particle comprising one or more SARS viral antigens.

88. The replicon particle of claim 87, wherein said SARS viral antigen is a spike protein.

- 89. The replicon particle of claim 87, wherein said particle comprises a replicon derived from Venezuelan Equine Encephalitis (VEE) and further comprises an envelope derived from Sindbus virus (SIN) or Semliki Forest Virus (SFV).
- 5 90. A vaccine comprising one or more SARS virus antigens and one or more respiratory virus antigens.
  - 91. The vaccine of claim 90, wherein said respiratory virus antigens are selected from the group consisting of influenza virus, human rhinovirus (HRV), parainfluenza virus (PIV), respiratory syncytial virus (RSV), adenovirus, metapneumovirus, and rhinovirus.
- 10 92. The vaccine of claim 91, wherein said respiratory virus antigen is from influenza virus.
  - 93. The vaccine of claim 90, wherein said respiratory virus antigen is from a coronavirus other than the SARS virus.
  - 94. A polypeptide comprising an immunogenic, surface exposed fragment of the amino acid sequence SEQ ID NO: 6042.
- 15 95. The polypeptide of claim 94, wherein said fragment does not include the last 50 amino acids of the C-terminus of SEQ ID NO: 6042.
  - 96. The polypeptide of claim 94, wherein said fragment does not include a transdomain region of SEQ ID NO: 6042.
- 97. The polypeptide of claim 94, wherein said fragment does not include a C-terminus cytoplasmic domain of SEQ ID NO: 6042.
  - 98. The polypeptide of claim 94, wherein said fragment does not include a N-terminus signal sequence.
  - 99. An isolated polynucleotide comprising a nucleic acid sequence selected from the group consisting of SEQ ID NOS: 9968 and 10066.
- 25 100. The polynucleotide of claim 99, wherein the polynucleotide comprising a nucleic acid sequence having > 80% sequence identity to a polynucleotide sequence selected from the group consisting of SEQ ID NOS: 9968 and 10066.
  - 101. An isolated polynucleotide comprising a fragment of at least 15 consecutive nucleic acids of a nucleic acid sequence selected from the group consisting of SEQ ID NOS: 9968 and 10066 and wherein said fragment does not consist entirely of SEQ ID NO: 10033.
  - 102. An isolated polypeptide comprising an amino acid sequence encoded by any one of claims 99 101.

103. The polypeptide of claim 102, comprising an amino acid sequence selected from the group consisting of SEQ ID NOS: 9969 – 10032, 10067, and 10015.

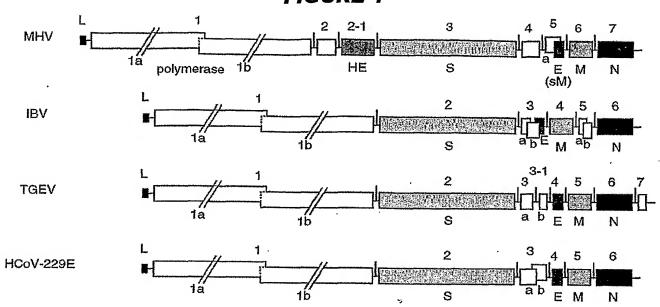
- 104. The polypeptide of claim 103, wherein the amino acid sequence is selected from the group consisting of SEQ ID NOS: 9997, 9998 and 10015.
- 5 105. An expression construct for recombinant expression of a SARS virus spike protein wherein said construct comprises a nucleic acid sequence selected from the group consisting of SEQ ID NOS: 6578 6583.
  - 106. A mammalian cell line stably expressing a SARS viral antigen.
  - 107. The cell line of claim 106, wherein said cell line is a Chinese Hamster Ovary (CHO) cell.
- 10 108. The cell line of claim 106, wherein the SARS viral antigen is a spike protein or fragment thereof.
  - 109. The cell line of claim 106, wherein the spike protein is truncated to remove the transmembrane sequence.
  - 110. A method of identifying a therapeutically active agent comprising the steps of: (a) contacting a therapeutically active agent with a buffer comprising SARS enzyme; and (b) measuring attenuation of the SARS enzyme.
    - 111. The method of claim 110 wherein the SARS enzyme is a SARS protease.
    - 112. The method of claim 111 wherein the buffer further comprises a peptide with a SARS protease cleave site.
- 20 113. The method of claim 110 wherein the measurement is made by the measurement of fluorescence.
  - 114. A vaccine of one of claims 22 to 37, and 90 to 93 further comprising an adjuvant.
  - 115. The vaccine of claim 114 wherein the adjuvant is a SMIP.

- 116. The vaccine of claim 115 wherein the SMIP compound is selected from the group consisting of an acylpiperazine, a tryptanthrin, an indoledione, a tetrahydroisoquinoline, a benzocyclodione, an amino azavinyl compound, a thiosemicarbazone, a lactam, an aminobenzimidazole quinolinone, a hydropthalamide, a benzophenone, an isoxazole, a sterol, a quinazolinone, a pyrole, an anthraquinone, a quinoxaline, a triazine, an benzazole, and a pyrazolopyrimidine, or a pharmaceutically acceptable salt, ester, or prodrug thereof.
- 30 117. A method of vaccinating a subject comprising administering a vaccine of one of claims 22 to 37, and 90 to 93.
  - 118. The method of claim 117 further comprising administering a SMIP.

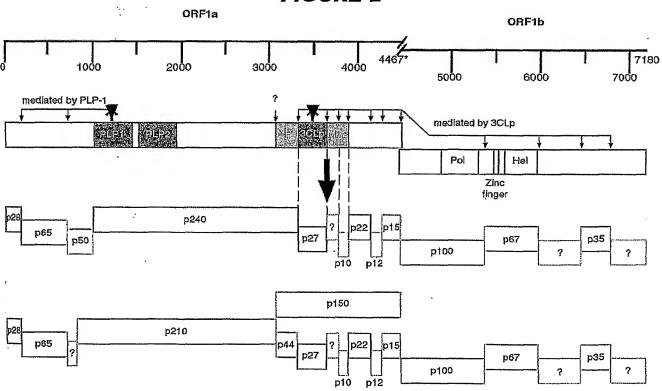
119. A method for treating a patient of one of claims 77 to 82 further comprising administering at least one SMIP compound.

120. A method for treating a patient of one of claims 77 to 82 further comprising administering at least one SMIS compound.

### FIGURE 1



#### FIGURE 2



### FIGURE 3

### FIGURE 3A

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Avian infectious	MHV N	(100)	THI	المراتع وا	r CAG(	34 CT	TUTZ	ATGT	TG	AAGGC	rcrge	AAC	3 C.T. C.J.	GC
Avian infectious	Conceners	(441)	- 44.64.6	ACC	IGAT(	3G TA	ATT.				rgcgi	'TGC	SOACT	TO
	Consensus	(900)	TA 1	r ddi	rcag(	3GTT	ATT	T T	TGI	AAGGC'	rc ge	AAC	<b>GTC1</b>	'GĆ

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BCV N	(585)	TCCT	AATTC	JAGA	CTAC	ТΤСΖ	CGC	GCA-	TC	CAGTAC	JAGCC
Avian infactious, branchitic M	(594)	ACCT	GCTAG	CGA	CTGG	TTCC	CGG:	CAC	AATC	CCGTGC	3-GCC
Andre mechons pionicinis M	(4/2)	AT - T	COECTO	3AGTC	circa	macic	TA COM	さんさればれ	CAMO	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	TO MY WAY
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MHV N	(6356)	AADT	A		TOTAL .	CHITCH	TO A A	1000	Printer and a	-	27 - Lill
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BCV N	(754)	Chia mi	N MANAGA		,/ 8U		8	00	ESKL JURGEYE	107//3 * * 17 3. W	817
MHV N	(757)	Tara da	AGTAA	TO A	GUAG	4 CT G	CCAA	AUA	AATÇA	GACA-	-GAA
Avian infectious bronchitis M	(634)	ACCCC	AGTAP	CGAA	GUAA		CCAP	AGA	AGTICA	(GGCA)−	-GAA
Avian infectious bronchitis N	(775)	W. CO.	TOATTE	rolliws	CCHAN	AGG	GAGA	AGA	GATGG	CTCAT	
Consensus	(110)	MAGCE	ANGTAR	CTAA	GCAA	A TG	CCAA	AGA	AATCA		GAA
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		(904)		910	·	92	20	·	930			946
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Avian infectious	pronchius M	(755)	ATT	TTGGTG	ATGA	CAAG	ATGAAT	GAG	GAAGG	PATT	AAGGA	TIGG
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	DCV N	(1119)	1119	touble of the Later	,113	)	114	10	1	150	***********	<u>1161</u>
	DUV N	(1095)	111	GAGAC	CATA.	2	ATGAAG	GTG	LTGAAT	GAGA	ATTT	GAA
Avian Infontious	IVIPIV N	(1092)		'GAGAC	TAIC		ATGAAA	eter	TGAAT	GAGA	ATTT	GAA
Avian Infectious	Dronchitis IV	(945)	TATA	GTAAA.	AATT	(OTG	AUGAGT	GTGT	LIGATG	GTGT	AG	GAA
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	MHVN	(1131)	TGCC	TACCA	ODKAE	PATCO	THECHE	CARE	TOTOTO	- FT 6 30	THO CH	'A' 'A' '
Avian infectious	DIOLICIMS N	(900)	CACC	FUCCAM	AGGAC	GAAC	STIGITA	A - GA	CCANA	GTCA	CGCC	AAC
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Avian injectious pronchitis N (1028	) ATTCAAGAC	CTGC TACA	AGAACAAG-TTC	PCCAGCGCCAAG
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(1248	3) 1248	,1260	,1270	1280 1290
BCV N (1211	) GAGAAATG	ATAATATAAG	rarrach cooper	DATA SOMETIME
MHV N (1214	) ATGAAGTAG	ATTA A TRICTION AND	Cammannanana	The same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the sa
LANCEL RECORDED DE DESCRIPTO DE LA ÉLOCO	O SCANCAGCG	TCAAAAGAAG	GAGAAGA AGTUA I	A Cabanan
Consensus (1248	) A GAAA G	ATAATATAAG	GTTGCAA GCC	AAAAGC GTGT
				Section 31
(1291	) <u>1291</u>	1300	1310 .1320	1222
BCV N (1254	) GCAGCAAA	TAAGAGTAGA	GAGTTGACTGCAC	A ronang
WIEV N (1257	1 (200 TV (200 CV (200 A) (200	THE PARTY OF THE PARTY OF THE PARTY.	THE THE PROPERTY WATER AND THE COURT WATER AND THE PARTY OF	2 2 3 4 5 46 3
Avian intections profichius N (1111	) GATGAAGTA	GATAAG	GCAMTGACCTOAC	TO TO TO TO A CONTROL
Consensus (1291	) GCAGCAAAA	TATAAGTAGA	GAATTGACC CAG	A GGA AG
	****	· · · · · · · · · · · · · · · · · · ·		Section 32
(1334	) 1334 ,1340	.1350	,1360	1376
BCV N (1294)	) ACCCTTCT-	TAAGAAGA	recarria	- CGCCITATIA
MHV N /1297	) Agricularing	CONGAGAMOO		
Walgir imagnons projectiffs to (1.120)	) AACAATGCA	CAGCTGGAAT	PUGATGATGAACC	CAACCTCATTA
Consensus (1334)	) AGCCTT T	TCAGAA	FTGATGATG	GCC ATA
and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s				Section 33
(1377)	) <u>1377</u>	.1390	.1400	4444
BCV N (1325)	CTGAAG	ACACCTCAGAZ	AAWAWAWA	
MHV N (1340)	) GGTTAGAAN	ATGACIMITAN	rarara a	
Avian infectious bronchitis N (1193)	ACEGGGGG	ATTCAGCACT	FGGAGAGAATGAG	ነባ፣ጥር ጥ አ አ
Consensus (1377)	T GAAG	AT CCTCA AT	rgtataa	TIGIAN
DOV				
BCV N		9883		
MHV N		9894		
Avian infectious bronchitis N	SEQ ID NO:	9903		

### FIGURE 3B

Section						
30 4	20		,1(		(1)	
CCAAACATTATGAGTAG	GTAATCO	ACGTTTAG	GGATG	GATG	(1)	HOBMPRO
ATGAGTAG				***		BCV M
ATGACTAG						MHV M
						Avian infectious brochitis virus M
ATGAGTAG					(1)	Consensus
Section:						
708	,60	"Catalina Interiorist Con-	50	42	(42)	Honima
TTATATCTGGAOTGCTG	ACCAGTTI	CICCAGCA	TA	AAAA	(42)	HOBMPRO
TTACACCTGGACTGCTG	ACCAGRIT	CACCAGCA	TA	GTAAC	(10)	BUV M
TTATCAGTGGACGCTG	<b>FCGTGTT</b> I	CICCACAG	TCAGG	ACCAC	(10)	MHV M
TGCACTCTTGACTG-TG	JCAAATTG	GAACGCGG	T.C	ATC		Avian infectious brochitis virus M
TTATCTCTGGACTGCTG	<b>3CCAGTT</b> I	CTCCAGCG	TC	A AAC	(42)	Consensus
Section :				~~	*****	y y y what has been some and a state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the
	100		90		(83)	HODEDO
AATGGAÄTTTÜTETTTĞ	PAAAGGAA	AAATTCCI	CTATT	TGAAC	(80)	HOBMPRO
AATGGAACTTTDCTTTG	TAAAGGAA	AAATTCCT	CTATT	TGAAG	(48)	BUV M
ARTIGGAATITCTETCHC	TAAGGAA	CGATTCCT	CAATT	TOVE	(51)	IVITY IVI
AATATTATA	<b>FTAAAGA</b>	GNGCTTT	CAGTA	ACAGI	(30)	Avian infectious brochitis virus M
AATGGAATTTTTCTTTG	TTAAGGAA	AAATTCCT	CTATT.	TGAGG	(63)	Consensus
Section				404	400	
,15016	0	140	130	124	(124)	HODEDO
ATCATATTGCAATTTGG	TTACABI	ACTITTTA	ATACT	GPATT	(121)	HOBIVIPRO
atcatatigeaattige	KTTACAAI	ACTITIA	ATACE	GHATA	(89)	BCV IVI
MTCATACTACAĞTTCGĞ	FRUNCTER	<b>ACLITITI</b> G	ATACT	OCAE!	(92)	MITV IVI
ATACTACTTCAGTATEG	TACTAL	ATTGTTTC	THOOF	CCGCA	(77)	Avian infectious brochitis virus M
ATCATATTGCAGTTTGG.	ATTACTAT	ACTTTTTA	ATACT.	GTATI	(124)	Consensus
Section (			A #14 14		(400)	
	777 SAN UN 1920 FLANGE ST. 808	180	170	165	(165)	Hopuppo
TTATGTTATTAAGATGA	FTTGTT,T	GCAGTATG	AAGTC	TATAC	(162)	HOBMPRO
TTATGTTATTAAGATGA	TTTGTT	GCAGTATG	NAGIG	TATAC	(130)	BCV M
TTATGTTGTGAAAATGA	TTTGTT	GTAGCATG	<u> GAGCIC</u>	TACAC	(133)	MHV M
TTACATAATGAAAATGA	FTTTATT	edyelcee	AACAA	TATGO	(118)	Avian infectious brochitis virus M
TTATGTTATTAAGATGA	FTTTGTTT	GCAGTATG	AAGTC	TATAC	(165)	Consensus
Section 6						
230 24	2:	220	ماريخ کارون د د د د د د د د د د د د د د د د د د د	206	(206)	
THACTAMAATCTTAACT	GCCCTT	CTTATGTG	rgree	TATII	(203)	HOBMPRO
TTACTATCATCTTAACT	GECCCTT	CTTATGTG	reree	CATTI	(171)	RCA W
י מבי וריי פרו וריי ביון ביון ביון ביון ביון ביון ביון בי	A TIME A COLOR	CTTATCTC	RETEC	$\mathbf{ACTTT}$	(1/4)	MHV M
THAACATTGCAGTAGGT	GCCCCTH	TGCTTTTG	ratec'	AGTGI	(159)	Avian intectious prochitis virus M
TTACTATTGTCTTAAGT:	GCCCCTT	CTTATGTG	rgreg	AATTI	(206)	Consensus

					— Section 7
(247)	247	260	270		287
HOBMPRO (244)	TTTTCAAT	PGCGTATA	CGCATTGAAT	AATGTGT.	ATCTTGGC
BCV M (212)	TTTTCAAT	FGCGTGTA	TGCGTTGAAT	AATGTGT	ATCTTGGC
MHV M (215)	TTTTTAAC:	rgcgtcta	TGCGCTÄÄAT	AATGTGT.	ATCTTGGA
Avian infectious brochitis virus M (200)	TAATTTCA	IGTATATA	TCGACCAAAT	ACAGGAG	GTCTTGTC
Consensus (247)	TTTTTAAT	<b>IGCGTATA</b>	TGCGTTGAAT	AATGTGT.	ATCTTGGC
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(288)		300	310		328
HOBMPRO (285)	CUTTCTAT	SCTTTTTA	CCATAGTEGC	CATTATT	ATGTGGAT
BCV M (253)	TTTTCTAT	GTTTTCA	CTATAGIÉG C	CATTATC	ATGTGGAT
MHV M (256)	TTTTCTAT	AGTGTTTA	CTATAGTGTC	מדעדודעם	ardrada a t
Avian infectious brochitis virus M (241)	GCAGCGAA	ATACTTA	CAGEGGTTGC	GTGTCTG	$\mathbf{r}_{CPHPTCA}$
Consensus (288)	TTTTCTATA	AGTTTTTA	CTATAGTGGC	CATTAT	ATCTECT OF
					— Section 9
(329)	329	340	350		369
HOBMPRO (326)	TGTGTATT	rrerexx	a Granda da da m	TO TO THE A TO	ממס או או איני
BCV M (294)	TGTGTATT	racasa	AGTATCAGGT	a Calmark an	
MHV M (297)	TANCTANT	PACTOR AM	AGCATCAGGT	TO THE CH	
Avian infectious brochitis virus M (282)	AGGATATT	aga mire ke		THE COUNTY AND A	CVGGVCTG
Consensus (329)	TOTOTA	ייי ע מייים שיים	A CTA TOA COT	TOTOTA A	
			TO THE CAUGE	4 C A A A A A A A	_ Section 10
(370)	370	380	,390	400	- Occion 10 410
HOBMPRO (367)	GAAGTTTT		CEACHESCAN	ACMAACK	
BCV M (335)	GAAGTTGG	racadron	CAACCCAGAA		
MHV M (338)	GCAGCTGG	Padadoni	CARCCCCGAA	nconnen. Neixannen.	MC12GM1G
Avian infectious brochitis virus M (323)	GGCAATGG	reace a mar		monaka monaka	MOOOO
Consensus (370)	GAAGTTGG	LCC V CLALA	LYVCCCYCYY TUVECCTOTO	アンファンスマン	
	Ommor 1 001	GONGTII	CAACCAGAA	ACAAACA.	<ul><li>Section 11</li></ul>
(411)	111	420	420	4.40	
			430	440	451
HOBMPRO (408)	TGTATAGA	LAIGAAAG	GAACAATGTA	TGTTAGG	CCGATAAT
BOV IVI (3/0)	TGTATAGA	eargaage	gaaggatgta	TGTTAGG	CCGATAAT
Auton infectious breakitis views M (379)	TGTATAGAS	LATGAAAG	GTACTGTGTA	TGTTAGA	OCCATTAT
Avian infectious brochitis virus M (359)	TAGG	I-TCAATA	CUCCLATCIA	ATGG	PCAACAAT
Consensus (411)	TGTATAGAT	PATGAAAG	GTACTATGTA	TGTTAGG	
					_ Section 12
(452)	452	60	470	,480	492
HOBMPRO (449)	TGAGGACTA	utcatact	CTGACGGTCA	CAATAAT.	A CGCGGCC
BCV M (417)	TGAGGACT	CCATACC	CTTACGGTCA	CAATAAT	ACGREETC
MHV M (420)	AGAGGATT	CCATACA	CTAACAGCCA	CTATCAT	rcgregre
Avian infectious brochitis virus M (392)	GTAATTITC	CTATAGA	GAGTGTGC	CAAT	
Consensus (452)		60 J	24.5	35 5 7 7 7	Cristing C

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(493)	493	,50	00		,510		520		E22
HOBMPRO (490)	ATGT	TTAC	ATT	CAAGG	TATA	AACT	COTAC	TGGCTAT	ימיצית
BCV M (458)	ATOT	TTAC	ATG	CAAGG	TAHAZ	AACTI	COTTO	a communi	m com
MHV M (461)	ACCT	CTAT	ATG	CAAGG	TI CHITTO	7 7 0 000	COOK	marammar	-
Avian infectious procintis virus IV (424)	CITT	CIE		CCAAT	TATAA	ACABT	TO A DID	TO POTA TO	marin.
Consensus (493)	ATCT	TTAC	ATG	CAAGG	TATAA	AGCT	GGTAC	TGGCTAT	LC T
	OF AN ANNAL WAS ARREST AND A SECOND ASSESSMENT AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SECOND AS A SE	And Brahaman Market Statement and American Annie		ta. 1-20-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	····			Section	
(534)	534	,540			550		560		E74
HOBMPRO (531)	IGGG	CAGA	TTT	CCCAC	تر لا بارس	ATGAG	mama	CIT A X CAM	A A A
DCV M (499)	$\mathbf{H} \supset \mathbf{G} \mathbf{H}$	CAGA	TTT	GCCAG	CTTAT	GTGAC	The other	CITA A COM	THE PER
IVITY IVI (DUZ)	4.13.4.4.11	LEMICAL:	100		CTTAT	2. A. d. d. d. 2.	THE PERSON NO.	and now recomme	
Avian infectious prochitis virus M (460)	GAGG	GIICA	GIG	COTTG	C	-TAAZ	TOTES	ACCAGAC	7 7
Consensus (534)	TTGT	CTGA	TTT	GCCTG	CTTAT	GTGAC	TGTTG	CTAACCT	المناسلة المناسلة
			•					—— Section	
(575)	575	580		59	90	ค	00		045
HOBMPRO (572)	ACAC	CTGT	GCA:	יי בייוי ביי	A A C C C	TOOM	min cim m	an an an a	4 4 4
DCV N (340)	ALAC	CHARLE.	1 6 244	TGTTAT	A A COMP	ATT CHANGE	Creek and the part while	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	10 10 100
10171 1013431	ZIL	£ 74877870873	200	the Line of the last	<b>たさらら</b>	COMME	THE PERSON IN SEC.		2.00
A COUNTY OF THE CHOOS DIOCHES VILUS IN (490)	TIGG	CTAA	A G A 3	PATAT	<b>Ψ</b> Ψ——		TO DO DEFERRE		7 100
Consensus (575)	TCAC	CTGT	GCA	CATAT	AAGCG	$\mathbf{TGGTT}$	THOUSE THE	CACACA	CAG.
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(616)	616			630		640	)		656
HOBMPRO (613)	GCGA	TACT	AGT	a Carrier	meand	TIETUTA A	erinema x x z	amadas az	417 47 174
BCV M (581)	GCGA	TACT	SCT	3GTTT	TGCTG	THEFT	COUNTRA	amaran a me	Tirri ect
1VIFIV IVI (204)	ALMAG	16.52 (2.747) 1870	31 F.Z. (**)		17 17 17 17 17 17 17 17 17 17 17 17 17 1	THE STREET, THE PERSON	PARTY OF THE STATE OF	الدروس المواجع الكفراميس بعدالا لمخ	and the last of
Avian infectious brochitis virus M (531)	ACG-	TAAT	4	TO C	PACCA	TATC-	amaaxi		
Consensus (616)	GCGA	TACT	AGTO	GTTT	TGCTG	ጥጥጥልጥ	CTTDAN	さいしい カッカン	TOO C
							OLIMA	Section	
(657)	657	•		670		.680		•	^~
HOBMPRO (654)	GGTA	ATTA	dda	Yorkani	TA TO TO A TO	a doda	N. W. C. C.	Temomales	697
DCV W (022)	UUTA	44 4 4 (	11 14 2		The Table	The second second	7 7 7 7 7	THE PERSON AND AND AND AND AND AND AND AND AND AN	-
MHV M (625)	GGAA	ATTA	7000	COTTO	TOMP'S	AAMAA	MACHEN	4 154	
THE THEOLOGO BIOCHILIS VILUS IN (302)	とうし しんして	さんしょんし	- L	AAAGBB	GGA A:A	TAACA	A A A C C T		7 70.5
Consensus (657)	GGTA	ATTA	CGZ	ACTGC	CATCA	ACCCA	AAAAAA.	THE CHACLE	1 75 177
		•					-12121CG(	Section	.A.I
(698)	698			710		,720			
HOBMPRO (695)		ACCGC	ידעי	Grada	CAAA	r wayna	מרטייות איז	mmmm x x o	738
BCV M (663)	GGAC7	120004	ריף מי		CANA	TATATION	THE PERSON IN	TITITAAG	AU
MHV M (663) Avian infectious brochitis virus M (601)	GGAC	ACCGC	יייאי	Grada			TOTATE		
Avian infectious brochitis virus M (601)	لوميا السياسة الشارية عاصو جواجو جواحو				तासम्बद्धाः - = = = = :		7.5.4559 _		
Consensus (698)	GGAC!	ACCGC	:ATT	GTTG	AGD D D'	ת ידי מ מיז א ידי מ מיז	TO COM A A		-
					x ~ 1.21.7.7.7	rwwrw	ICTAA		
			•						
(739)					***************************************	<del></del>		Section 19	
(739) HOBMPRO (736)	ጥር ና	SEQ ID	ио.	9912					
BCV M (694)		SEQ ID							
MHV M (688)	S	EQ ID							
Avian infectious brochitis virus M (601)	S	EQ ID							
Consensus (739)									

### FIGURE 3C

					<b></b>				Section 1
	(1)	1	,10		20		,30	40 .	Section 1 53
HOBHEGA	(1)	CTAAZ	CTCAG	GAAAATG		CTTCC			TAGÉTGCAT
BCV HE	. (1)	CTAAZ	VCTCAGT	GAAAATGI	TTTTG	CTTCT	TAGATT	'TGTTCTAGT	TAGCTGCAT
MHV HE	(1)	198-21 AUTO 114		1977 - 1977 - 1979 					
Consensus		CTAAA	ACTCAGI	GAAAATG	PTTTTG	CTTC	TAGATT	T TTCTAGI	TAGCTGCAT Section 2
	(54)	54	60	,70		,80		90	106
HOBHEGA			GTAGCT	TAGGTTT.	TACAA	CCCT	CTACC	ATGITGITI	CGCATGTAA
<b>BCV HE</b>	(54)	AATT	GTAGC	TAGGTTT	IGACAA	TCCT	CTACC	ATGTTGTTT	CGCATTTAA
MHV HE	(1)	201 Amilion and 200 Amilion	on how has been been been a	of one one one can one one one of	ME WHE MAD THAN THE PARTY		and end inc and and an	4 300 300 300 300 300 300 300 000 00	THE REAL PROPERTY AND AND AND AND AND AND AND AND AND AND
Consensus	(54)	AATTO	GTAGC	TAGGTTT:	r ACAA	CCT	CCTACCA	ATGTTGTTI	CGCAT TAA
	. , ,		***						Section 3
	(107)	107		,120	.1:	30	.14	0	159
HOBHEGA			YGATTG		rreere	ACAG	rccrrc	GATTGTAAT	CATATTGTT
BCV HE	(107)	ATGG	ACATTO	STTTTTAT	rtggtg	ACAG'	regtte!	AGATTGTAAT	CATGTTGTT
MHV HE	(1)				He direction with the	Crisinative Col	DIO DEL DIFFERMANTI		
		ATGG	AGATTG	TTTTTAT:	TTGGTG	ACAG:	rcgrrcz	AGATTGTAAT	CAT TTGTT
			ar-terral articles and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second and the second an			******	<b>*****</b>		——Section 4
	(160)	160		170	,180		,190	,200	212
HOBHEGA	(160)	AATA	rcaacc	CCATAAT!	PATTET	TATA'	rggacet	TTAATCCTG:	rtctgtgtga
BCV HE	(160)	ACTA	CCAACC	CCCGTAAT	<b>PATTCT</b>	TATAT	TGGACC!	TTAATCCTG	ccrrerere
MHY HE	(1)								
Consensus	(160)	A TA	CAACC	CCC TAAT	PATTCT	TATA'	TGGACC	TTAATCCTG	, TGTGTG
		· · · · · · · · · · · · · · · · · · ·							Section 5
	(213)	213	220	23	0	24	10	250	265
HOBHEGA	(213)	PTCT	GGTAAA	STATCATC!	TAAAGC	TGGC.	AACTCC	ATTTTTAGG7	AGTUTTCACT
BCV HE	(213)	TICT	GGTAAA.	ATATCATC'	TAAAGC	TGGC.	AACTCC/	ATTTTTAGG/	AGTUTTCACI AGTTTTCACI
MHV HE	(1)				<u> </u>				
Consensus	(213)	TTCT	GGTAAA.	ATATCATC'	TAAAGC	TGGC.	AACTCC	ATTTTTAGG	AGTTTTCACI
									——— Section 6
	(266)	266		280		290	ž	300	318
HOBHEGA	(266)	TTAC	CGATTT	<b>TTATAATT</b>	ACAĆĀG	GCGA	AGGTCA	ACAAATTAT!	PTTTATGAC
BCV HE	(266)	TTAC	CGATTT'	TTATAATT.	ACACAC	GCGA	AGGTCA	AGAATTAT!	ITTTTATGAC INTCTATGAC
MHV HE	(1)								
Consensus	(266)	TTAC	CGATTT	TTATAATT	ACACAG	GCGA.	AGGTCA	ACAAATTAT'	TTT TATGAG
	(319)	319		330	340		350	360	371
HOBHEGA	(319)	GGTG	TTAATT	TTACGCCT	TATCAT	GCCT	TTAAAT	GCAACCGTT	CTGGTAGTAA
BCV HE	(319)	cará	TTAATT	TTACGCCT	TATCAT	GCCT	TTAAAT	GCACCACTT	CTGGTAGTAA
MHV HE	(1)	Spiritula, various, sense,	ರ್ಷ-೧೯೮೫ ಗಾಗಿಗಳು 	ersarinasimistikak ————————		www.me	anderskaarden de Gebeure		
Consensus			ттаатт	TTACGCCT	TATCAT	GCCT	TTAAAT	GCA C TT	CTGGTAGTAA
~~!!!!!!!!!!!	(0.0)								

		·	***************************************			**********************	**************************************		*******	Sect	ion 8
	(372)	372	,38	0	39	0	,400		410		40
OBHEGA	(372)	TGATI	TTTG(	SATEC	AGAATA	LAAGGO	TTGTTT	CATACT	CAGGUTT	ATAAGA	AT.
DOVINE	(UIZ)	TOHIL	1 4 1 1 1 1 1	Tr Paul Visit 1	AIAMAIT	A A Late	all evis Contractions	ירויות אור עציו	124 124 124 127 127 127 127 127 127 127 127 127 127	TO TO TO TO TO	. A.III .
MHV HE	(1)			-ATGG	CAATA	AAGCT	CGATTT	PATGCC	CGAGTGT	arcaca	AG
onsensus	(372)	TGATA	TTTG	SATGC	AGAATA	AAGGC	TTGTTT	CATACT	CAGGTTT	αρααπα	יייי ע
					***************************************					Sect	
	(425)	425	430		440		450	460	1		A 177
OBHEGA	(425)	TGGCI	GTGTZ	v n°CGC	in order	'A'C' TOTT	TANK TO TO TO TO	TO THE PARTY	A en a en cimen	fri zi rri z z z	CO COL
BCV HE	(425)	TEECT	Gren	mece.	i Cele Chin	Acmer			ATATGTT	LALAAI	GU
MHV HE	(44)	TEGEC	ייי עעטי	772/2/27	100000	TO THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF TH	nomina a	COMORG	TTATECC	TATAAT	966
	(425)	TGGCT	CTTT	A LUCIO	/ GC C U u	, <b>У</b> Сиппии 7 Т <i>С</i> (Сейт Т	TOTARA	reagra co	ATATECC ATATETT	<u> CAUGGA</u>	r(d(e.)
	/	1000		21606	AGCCII	HCTTT	IGIIAA.	LGTACC	ATATGTT		
	(478)	478		490		.500		.510		Section	
OBHEGA	(478)	manac	non	100	a month	STORIO STATE		31U	520	SAC 1614-am 1.6	530
BCVHE	(478)					u u Gura	AATCTG	a TAG TIT	TAGTCCT	TAATAA	COC
MHVHE	(97)	AAM			AGCCCI	TEGTA	AALCTG	XTAGTT	TAGETCE	TAAFAA	QC(
	(379)	MAMAGE	WWW.	ACCOC.	TUCA	male Ca	AAGACA	ATACTT	TAACACT	CAATAA	a a c
onsensus i	(410)	TUTGU	ACAAT	CTAC	recect	TTGTA	AATCTG	STAGTT	TAGT CT		
Marie Company	(FAA)	FOX								Sectio	n 11
ODUEOA	(531)	231	an universit	40	5	50	,560	ng**70): 1	,570		583
DON'LLE	(531)	I.C.A.I	AFATZ	GCTCC	TCAAG	CTAAC	TCTGGG	FATTAT	0/U TAT/TATA	AGGTTÇ	AAC
DOV HE	(331)	TGCAL	HIRIE	<b>SGCTC</b> (	TGAAG	CTAAT	TTTGGGG	TATTOAT	A THE TRAIN	accommo	2000
IMITA LIE (	(100)	CACCI	TCATA	TUGAL	IGGAGT	CTAAT	TATGTT	ATTAT	TACTATE	AGACTC	700
onsensus (	(531)	TGCAT	'ATATA	GCTC	TGAAG	CTAAT	T TGGGC	FATTAT	TATTATA	AGGTTG	AAC
										— Sectio	n 12
	(584)	584	590		,600		610	,62	20		636
OBHEGA (	(584)	CTGAT	TTTT	TTTG1	CAGGI	TOTGA	CGAGTAT	ATCGT	ACCACTA	TGTATT	Tritin
BOV HE (	(584)	CTGAT	m + m + m + 2	CHAPT CLE	CAGCO	TRACE	MAZONAN	moom	n cieralisten	The state of the state of	CCI CT
MILLA LIE (	(200)	LIAMI	THUAL	AUGA	AMERICA	Treasure A	TESTATION	TO TO TO THE	TO THE PARTY OF	man a case	COLLIER.
onsensus (	(584)	CTGAT	TTTTA	TTTGT	CAGGT	TGTGA	CGAGTAT	ATCGT	ACCACTT	TGTATT	Title
			**************************************	**************************************	***************************************				,	Sectio	n 13
	(637)			65		660		670			680
OBHEGA (	(637)	AACGG	CAAGT	TTTT			CCALMAC		AAGTA	iin Amera	mesa
BCV HE	(637)	AACGG	CAAGT	TTTTC			CGAAMAC		AAGTA		404
MHV HE	(256)	AATGG	CCATI	CCAAC	GGCAG	المال سال	decamer	TOCOCA	ATAAATA		1 52
onsensus (	637)	AACGG	CAAGT	TTTTC		The state of	CGAATAC	in		TTATGA	
						-44	COMMINE	, <u></u>	MMGIM	Sectio	
(	(690)	690		,700		710	,72	<b>1</b>	720	OECHO	• •
OBLIEGA (	675)	TACTO	<i>አ</i> ለ ጥ አብ	भाक्षण स्ट्रा	्रिता १८ ५८ वर वर्ष	222	n dimestine		,730 PATGGTC	***************************************	742
DBHEGA /	( ,		2.4.4.4	and the second or	market Lan	HAGAU	ACTOCAL	TTATT	PATGGTC PATGGTC	CAATT	CTA
OBHEGA (	6751										~ m -
BCA HF {	6/5)	CTCTC	AATAT	DALEI Marana	HAATA	AAGAC	ACTGGTC	TTATT	PATGGTO	CAATT	CILA
WHY HE (	(675) (309)	CTCTC	AGAGT	TACTA	ATAATA	TGGAT	ATTGGTC	TCTTA	PATGGTO PATGGTO PATGGTO	TCAATT	CCA

					#			Water State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the	Section	n 15
	(743)	743	,750	,7	60	,770		,780		795
HOBHEGA	(728)	C	AG	ANACCA	TTACCA	,	-creere	TIGATETT	AATTGT	TAT
BCV HE	(728)		TG	ANAOCA	TTACCA		- crecri	TTGACTT	AATTGT	CAT
	(362)	CCTTGG	ATGTTC	GCAACA	CTGCTA	AGGAT	CCGGGTC	TIGATETO	ACTTGC	AGG
	(743)			AAACCA				TTGATCTT		
				<del></del>	*				Sectio	n 16
	(796)	796		810	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	820	83			848
HOBHEGA								TCAAATGA		
BCV HE								TCAAATGA		
MHV HE	(415)	TATCTT	GCATTO	ACTCCT	GGTAAT	AATAT	GCCTCTC	TCCTTAGA	ATATET	GTT
Consensus	(796)	TATTTA	GTTTT	ACCCTCT	GGTAAT	TATTT.	AGCCATI	TCAAATGA	GCTATT	GTT
						www.eastern.com			Sectio	n 17
	(849)	849		160	,870		,880	890		901
HOBHEGA								ITAAGGAT1		
<b>BCV HE</b>								TARGGATI		
MHV HE								CAAAGCGCT		
Consensus	(849)	AACTGI	TCCTA	CAAAGO	CAATCTO	TCTTA.	ATAAGC	STAAGGATI	TTACGC	CTG
							(M) + (		Section	n 18
	(902)	902	910		,920	93		940	S	954
HOBHEGA	(872)	TACAGO	TTGTT	BATTCG	GGTGGI	ACAAT	GCCAGG	CAGTETGAT	IAACATG	ACC
<b>BCV HE</b>								iagrergai		
MHV HE								ZAGTCAGAC		
Consensus	(902)	TACAGG	TTGTT	GATTCG	CGGTGG	ACAAT	GCCAGG	CAGTCTGAT		
• ,	•		, in Hammaritan						Sectio	
	(955)	955 ,9	60	970	र उक्क सर भगा । इ.स.	980	20 - 31 17 5 9 - 13 7 - 34	990	Collaborate Coloniant Colonia	1007
HOBHEGA	(925)	GCGGTT	CCTTG	rcaaec.	CCCTA	TGTTA	TTTTCG;	raattera (	ITAGGAA	CTZ
<b>BCV HE</b>								DAATTCTA		
MHV HE	(574)	GCTGCF	YGCCIG,	r'Çagct(	SCCATA!	PERTT	CTITICG	CAACACAT	T'TGCGAA	TT.
Consensus	(955)	GC GTT	GCTTG'	rcaacc	CCGTA	CTGTTA	TTTTCG	PAATTCTAC	CTACCAA	TTZ
									Section	
	(1008)	1008		1020	10	30	,1040		50	1060
<b>HOBHEGA</b>	(978)	TGTTG	FTGTTT	ATG	ATTATA	ATCATG	GAGATG	Jrggrern,	ACTAGOA	TAC
BCV HE	(978)	TGTTG	TGTT	ATG	YTAT CA.	TCATC	GGGATG	crecraria	ACTAGCA	TAC
								TTCATTEC!		
Consensus	(1008)	TGTTG	FTGTTT	ATG	ATAT AL	ATCATG	G GATG	CTGGTTTT		
			www.ul-sp*						Section	
	(1061)	1061	107		,1080		,1090	1100	***************************************	111
HOBHEGA	(1028)	TTACTO	egruig.	TTATAT	AATTCA	COTIGI	TTTTCG	CAGCAAGG	CGRITTI	AGC
								CAGCAAGG'		
								CAGCAGGG;		
								CAGCAAGG'		

								Section 22
(1114)	1114	,1120	1130	·	,1140		,1150	1166
HOBHEGA (1081) BCV HE (1081) MHV HE (733)	TATGAT	PAATGTT.	AGCAGTG'	rcrec	CCTCTC	TACCC	CTATGGCAG	ATGTCCCAC
BCV HE (1081)	TATGAT	PAATGTT.	AGCAGTG!	rcmgg	CCTCTC	TACCC	PTATECAC	ATGCCCTAC
	the party of the party of	pa bat applicate and " specificate was a	ر مهتد مسي منش مهد دود پيتراروي	mer and happy to be made		シエエエひじり	SIMCGETCA	CHAMPUURAATE
Consensus (1114)	TATGAT	CAATGTT.	AGCAGTG:	rcrgg	CCTCTC	CTACCC	TATGGCAG	ATGTCC AC
			***************************************					Section 23
(1167) HOBHEGA (1134) BCV HE (1134)	1167		,1180	,1	190	.1200	Ó	1219
HOBHEGA (1134)	TGCTGC	TGATAT'	TAATAAC	CTGA	TTTACC	3CATTOO	Tranana	TAMES CANAS
BCV HE (1134)	TGETEC	TGATAT	FAATACC	drga	TGTACC	TATT	and a day of c	AMCCCOTAC
MHV HE (786)	GGCAGC	TAACAT	FGGTTA-	TAT	GGCACC	TO TOTAL	OT A TOTA TE	A C C C T C T C C
Consensus (1167)	TGCTGC	TGATAT	PAATAAC	CTGA	TGTACC	14 <b>7</b> 44 4 4 4 5	3 <b>7722 C. 222</b> C	TAMOUGUTAL TO
								Section 24
(1220)	1220	,123	D	.1240	•	1250	.1260	
HOBHEGA (1187)	CAGTE	tranica de	ringg car	rábbb	nicial de la	arring read	1200 2017 0 8 8 6 10	Ammon Norm
HOBHEGA (1187) BCV HE (1187)	CAATTA	arming Co	rnicacan		TACATA			AULGIAGII
MHV HE (836)	CGGTC	TACTEC	PAGGTGT	ייים או יייים	TCCCTT			41111111111
Consensus (1220)	CAGTTA	The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s	PTGGCAT	հերահանա Դարաբան	TOCOTTO	SALUCIO COLO	AND AND AND	ATTOTICIES
					199910	1110000	JICMIMALI	Section 25
(1273)	1273	,1280	,129	)	,1300	1	,1310	1325
HOBHEGA (1240)	ned Strain	וווימיו מיוויו	DE LA PORTE	0000	Nizara in Kirk		1010	C261
HOBHEGA (1240) BCV HE (1240)	THE PROPERTY.	in a man		n a can en	varioni varioni		Cidnata	RECEITAGAC
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	and the first the first	factorial exit,	Lilantuo.	THORT	MALGGI	MOTAGO	CTGCATGA	
(1326)	1226	4997	A	A. J. Can's department		and a second	* · Y	Section 26
HOBHEGA (1293)		1001	SEO II	O NO:	9913			
BCV UE (1283)	CALAAI	CIAAAC	SEQ II		9885			
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Consensus (1326)	CATAAT	CTAAAC						

### FIGURE 4

### FIGURE 4A

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	(1)	1	~# <b>\$###</b> ########	.10	)		20				39
avian infectious bronchitis pol 1ab	(1)			<b>-</b> .							
bovine coronavirus pol 1ab	(1)	MSKI	NKY	BBE:	LHWA	PEFF	WMEI	DAEE	KL DNI	SSSEVI	ΣĮV
Human corona 229E pol 1ab	(1)				Sun- man 1000	SHORT ARMS DONE DATE	-MA	CNRVT	LAVAS	DSEIS	ANG
Murine hepatitis pol 1ab	(1)	MAKN	(GKY)	JIG.	FKWA	PEFE	WML	NASE	KEGNI	DSEIS/ ERSEE	GF
Consensus	(1)	MAKI	KY	3L	WA	PEFF	WM	NA E	KL NE	DSSE I	Ď
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	(40)	40			50		,60				78
avian infectious bronchitis pol 1ab	(1)					2000 Name and and					
bovine coronavirus pol 1ab			MOK	Re T	GGIC	PENH	NMV.	ORKT	KOF	cvossi	TR
Human corona 229E pol 1ab	(21)	CSTI	AOA	/RR	YSEA	ASNO	FRA	RFVS	DFOT	CIVGIA	COCTA
Murine hepatitis pol 1ab	(40)	CPSA	AOE	PKV	кект	LVNH	ับเรีย	งอีรสิน	PANEC	CVOSA	rir e
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avian infectious bronchitis pol 1ab		***				a 2007 (2000000 ex					11/
bovine coronavirus pol 1ab	(79)	PERM	ÎN TE P	์ ใกษาเ	E HISTT.	T.O Diff	TACI	Ip KVES	In Spi	GMSLE	OV.
Human corona 229E pol 1ab	(60)	TYVE	GLH		ETEC	MIME	H C D	id Grantii	3.C 83.T (88) E. T	MT/	756
Murine hepatitis pol 1ab	(79)	DIE	DEDÎ	OK	FEAS	TMM	TO P		AV DE L	RISIQ?	va m
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	(118)	118			.130	<b>1</b>		,140		00000	156
avian infectious bronchitis pol 1ab	(110)	110	Mack	27.17	VALUE	D		140	F3 27 F	VILVSE	150
bovine coronavirus pol 1ab	(118)	VPTO	NONC	्राक्षण विश्व स्थापन		TINT	SEATING.	Con Alway	IN WITH	AYQLYI	VIIIT
Human corona 229E pol 1ab	(93)	MONV	T. H. F.			P. P. L.	W. Santa	AUCU III	MINTER	TAT OTHER	AT D
Murine hepatitis pol 1ab	(118)	MILGU	ואלו וו	י ב ב	CAT T	K RAZ C	TEAN	1000 m	2D V (0.2)	OYLCGA AEHLE	PTZ O
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	(157)	157			17	7.O		190			
avian infectious bronchitis pol 1ab	(24)	8808	CONTRACT	ीच चर्ड	ên e u	NDVD	vain z	100	ir e o r	SĽQTG	180
bovine coronavirus pol 1ab	(457)	DACT	C EVE 7			WEAL	T TO TO T		an Dr	MAMAŢI	ANY E
Human corona 229E pol 1ab	(126)	KDUM	SELVI	MO.	ron u	PCPN			DAY O A	WLTKRI	CALC CALC
Murine hepatitis pol 1ab	(157)	SACT	CION	ייבי אינ. ווכי ייני		EVIN	mo ri	TO WATE	THE A	WSTLLI	PL
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•	(196)	106				240		202		JEUU	
avian infectious bronchitis pol 1ab	(190)	190			. 3/2-5 E.U. 1007 F 7627 Care	210	r.F.	220	3. 32. 72	TPGVP	234
bovine coronavirus pol 1ab	(406)	KEET		 	-172734	<u>V</u> C	1100 m C C C C C C C C C C C C C C C C C C	ile friti Ki	VUKI	TPGVP	<b>1</b> K, V
Human corona 229E pol 1ab	(180)	Darke.	HYP	NKUI	INKS	GEEH	W.I.W.	KVEO	ATH TO	HDEPKO GDALHI HLNPKO	ZKE.
Murine hepatitis pol 1ab	(100)	PARTY		· · ·		U-	- Navi	JALLE.	LEYVE	GDALHI	LLR
Consensus	(106)	CERC	OVIC	o G H i	KKA	ATME	MIXIDI	NXAD	ACE E	HTNEK	KY
Consensus	(120)	GFKG			KRA	M	AXMI	· AEDI	a DLV	HDAPKO	KF

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	(235)	235	240		250		260		- 000410	273
avian infectious bronchitis pol 1ab	(88)	LKAT	SKLAI	DLEDI	FGVSP	TARK	YRELLE	TACO	wstr	VE A
bovine coronavirus pol 1ab	(234)	SKKA	YATIT	COVEG	VKPT.T.	VVDD	YGCDY1	CCTX	DOTE	A SE A
Human corona 229E pol 1ab	(190)	NGSV	T.EMAT.T	राष्ट्र प्रस्ता	CORTI	TOTA	PDKIA		DUME	N.C.
Murine hepatitis pol 1ab	(235)	down	Z NATT		Charles T	HODE AVEN	YGCDYI	.vr.go	E A MATERIAL	NGO
Consensus	(200)	SON	្នាស់ ក្រុង ក្រុង ក្រុង ក្រុង ក្រុង ក្រុង ក្រុង ក្រុង ក្រុង ក្រុង ក្រុង ក្រុង ក្រុង ក្រុង ក្រុង ក្រុង ក្រុង ក្	NG TOO	X V R T TI	L XXX	x e & DXJ	GCHA	KGTE	254
Consensus	(230)	SKKA	ХАЦАГ	CGYRG	AKLTT	PADÖ	YGCLYI	GALA		YA
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	(274)		280	•	290		,300			312
avian infectious bronchitis pol 1ab	(127)	LDVR	AOTLI	EIFD	PTEIL	WLOV	AAKIHN	SSMA	MRRI	VGE
bovine coronavirus pol 1ab	(273)	DKTE	OEMKZ	AL PET	NSORT.	PFDV	TVAWHY	V R ñ É	RVVM	PFA.
Human corona 229E pol 1ab	(229)	NITE	AFTICI	PWRTS	ALVOC	TO COM	KSWSVe	Durc	LK GG	CCN
Murine hepatitis pol 1ab	(274)	TO TABLE	CHMEI		MD MCH	Dept	LVAWES		randı Kalakiri	B # A
Consensus	(274)	DIMI	V Euch	TEDT	WSD L	D S TO S	TANKES!	HERE	KAAM	KIT O
Ooridonday	(E : 7)	DALL	WEIVI	Jurri	MOD P	DV	VAWHV	DKDF		
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	(313)		32			30		40	The second systems	351
avian infectious bronchitis pol 1ab	(166)	MTAK	WMDAI	GSNL	SALFQ	IVKQ	QIARIE	'QKAL	AIFEI	NVN
bovine coronavirus pol 1ab	(312)	SAST	IRSVI	YVAN	PTEDL	CDGS	VVIKEE	VHVY	ADDS	DIL
Human corona 229E pol 1ab	(268)	VÍSN	KLCVX	PGNV	KPGDA	VITT	OOAGAG	FKYF	ССМПО	KF
Murine hepatitis pol 1ab	(313)	TLAT	VRCTI	VVGO	PEEDV	VDGD	VVVREF	AHTT	AANA	TACK
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	(352)	352	`	60		370		380	900001	390
avian infectious bronchitis pol 1ab							VVVERT	T ****	## m + ~ =	707
bovine coronavirus pol 1ab	(351)	DOUN	TTENTA	C C PA		O L I V	FYGVDÎ	TAAV	EFAG:	T.C.T.
Human corona 229E pol 1ab	(201)	DAN LINE	mMin9r%	EO CE E	un a va	VVIV	LING A DI	KULL	F AMOI	E G X
Murine hepatitis pol 1ab	(307)	VAN-		<u> </u>	TEGAR	VWRY	ľAľQsv	DCFV	ASSTI	EVE
	(352)	<b>松山湖</b> 一	REN	GE LWP.	YTDSS	WTEF	СИКТКІ	CECG	ELTQI	EGY.
Consensus	(352)	RLPN	I II	. F	IEAAS	VI V	IYL KI			
									Section	111
	(391)			400		,410				429
avian infectious bronchitis pol 1ab	(244)	ASIN	GAVAI	OFEE	LPNGF	MGSK	IFTLA	FFKE	AAVRI	TVE
bovine coronavirus pol 1ab	(390)	IDCE	ODLCI	KGW.	VEGNM	TDEE	ACTTCG	HVYE	ng pri	MA O
Human corona 229E pol 1ab	(336)	EEHV	NRMDT	CFN	VRNSV	TORC	RLAMIC	ΔΕΜΠ	SMADE	
Murine hepatitis pol 1ab	(388)	Vocc	CDTO	E CM	ZACNM	MACH	PCFGCT	LA NIŽŽIM	DMPT D	2000
Consensus	(391)	The	CDICI	FICTOR	UDNIM	MARKE	CTTLG	25 14 27 14 77 157	SAVRI	
	(001)	ما اسلاماد	GDTCT	E ICCOM	A E IMIMET	MUGE	CTTTG			
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	(430)	430	······································	440	( <del>4</del> 622 7 7 2	450		2545		468
avian infectious bronchitis pol 1ab	(283)	NIPN	APRGI	KGFE	VVGNA	KGTQ	VVVRGM	RNDL	TLLDÇ	2KA
bovine coronavirus pol 1ab	(429)	SSGV	LPVNE	VIHI	KSAAG	YGGF	GCKDSE	TLYG	QTVVY	YFG
					the way a brief of the thinks		The artificiants			
Human corona 229E pol 1ab	(375)	ASGV						-SK-	PWFMF	<b>KA</b>
Human corona 229E pol 1ab Murine hepatitis pol 1ab	(375)	ASGV					RESE	-SK- KLYC	PWFMF HAVVI	RKA PFG
	(375) (427)	ASGV SSGV	IPEGG	VLET	ŸYDDI QSTDT VSADA	VN	RESE KDSF	-SK- KLYG KLYG	PWFVP LAVVE VV	PFG

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	(469)	469		480		,490		507 SGNFALS
avian infectious bronchitis pol 1ab	(322)	DIPVE	PEGW	AILDGE	LCYV	FRSGDR	FYAAPL	SGNFALS
bovine coronavirus pol 1ab	(468)	GCVYW	S-PAI	NIWIP.	TKSS	VKSYDG:	LVYTGV	VGCKATV
Human corona 229E pol 1ab	(405)	EDIFC	P-CWS	ALASAI	KOLK	VTTGEL	VRFVKS	ICNSAVA
Murine hepatitis pol 1ab	(462)	SAVYV	is-eci	GMWLP	ZIWSS	VKSYSC	LTYTGV	VGCKATV:
Consensus	(469)	D VYW	S PW	SAIWIP	IL SS	VKSYDG	L YTGV	VGNKAIV
								Section 14
	(508)	508		520		530		546
avian infectious bronchitis pol 1ab	(361)	DVHCC	ERVV	LSDGW!	PPEIN	DGLILA	ALYSSE	SVSELVI
bovine coronavirus pol 1ab								VWHKQLL
Human corona 229E pol 1ab	(443)	VVGGI	TOIL	SMPEK	FLNAF	DVFVTA	IOTVFD	CAVETCE
Murine hepatitis pol 1ab								VYHRQLL
Consensus	(508)	VT						VWHEQLT
		Met PK-Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Communication of the Co					and the second section of the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second	Section 15
	(547)	547	and was discounted to the second	,560		,570		585
avian infectious bronchitis pol 1ab	(400)	ALKKO	EPFK	FLGHKF	VYAKD	AAVSFT	LAKAAT	IÄDVLRL
bovine coronavirus pol 1ab	(545)	LNRG	/YKPL	JENIDY	ENMRR	AKFSLE	PETYCA	DOFMEFL
Human corona 229E pol 1ab	(482)	TAGK	FDKV	PYVLI	DNÄLV	KLVTTK	LKGYRE	RGLNKVK
Murine hepatitis pol 1ab			XSLI	GENVDL	EVKRR	AEFACK	-FATCG	DGLVPLL
Consensus	(547)	INRKA	A P	LENVDL:	FNARR	A VS K		DGLVPLL
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	1 3 m m m 3	PT CO. ATO			in.	m km		624
	(586)	586	ma- /gram-rangers = 123	60		,610		
avian infectious bronchitis pol 1ab	(439)	FOSAF	RVIAE	DVWSSF'	rekše	'EFWKLA	YGKVRN	LEEFVKT
bovine coronavirus pol 1ab	(439) (584)	FOSAI	PRAY	DVWSSE' YLAVĒG	rekse Darcd	YADKIC	YGKVRN HAVVSK	LEEFYKT SKELLDV
bovine coronavirus pol 1ab Human corona 229E pol 1ab	(439) (584) (521)	FOS AF TODDEN YATV	/PRAY /VGST	SEVKSS YLAVSG DVWSSF	TEKŠF QAŽCD	EFWKLA YADKIC -RVERS	YGKVRN HAVVSK TAVLTI	LEEFYKT SKELLDV ANNYSKL
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab	(439) (584) (521) (577)	FOSAI TOOLI YAIYI TOOLI	/PRAY /VGST /PRSY	KTIKEG SENKYE ATVAGE ONMSEE,	TEKŠF QAÍCD  QAFTS	EFWKLA YADKIC -RVERS MMVNFS	YGKVRN HAVVSK TAVLTI HEVTDM	LEEFVKT SKELLDW ANNYSKL CMDMALL
bovine coronavirus pol 1ab Human corona 229E pol 1ab	(439) (584) (521) (577)	FOSAI TOOLI YAIYI TOOLI	/PRAY /VGST /PRSY	SEVKSS YLAVSG DVWSSF	TEKŠF QAÍCD  QAFTS	EFWKLA YADKIC -RVERS MMVNFS	YĞKYRN HAVVSK TAVLTI HEVTDM HAVVSI	LEEFMKT SKELLDV ANNYSKL CMDMALL A EMSKL
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab	(439) (584) (521) (577) (586)	FOSAI LEDIX YATV LOGL LOSL	PRAY /VGST /PRSY /VRAY	DVWSEF YLAVEG EEVKSS YLIKSG YLIKSG	TEKSF QAÍCD  QAFTS QAFS	EFWKEA YADKIC -RVERS MMVNFS VKIS	YGKVRN HAVVSK TAVLTI HEVTOM HAVVSI	LEEFMKT SKELLDW ANNYSKL CMDMALL A EMSKL Section 17
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus	(439) (584) (521) (577) (586) (625)	FOSAF LODEN YATV LOGEN LOSEN	/PRAY /VGST /PRSY /VRAY 630	DVWSSF YLAVSG EEVKSS YLIKSG YLIKSG	TEKSF QATCD QAFTS QAFS	EFWKEA YADKIC -RVERS MMVNFS VKIS	YGKVRN HAVVSK TAVLTI HEVTOM HAVVSI	LEEFMKT SKELLDW ANNYSKI CMDMALI A EMSKL Section 17 663
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus avian infectious bronchitis pol 1ab	(439) (584) (521) (577) (586) (625) (478)	FOSAF LEDDE YATVI LEGEL LEGEL LEGEL E25 VVCK	PRAY VGST PRSX VRAY 630	DVWSSF TLAVEG EEVKSS YLIKSG YLIKSG VILAAV	TEKSF QAECD QAFTS QAFS 640 LGEDI	PEFWKEA YADKIC -RVERS MMVNFS VKIS 65 WHLVS-	YGKVRN HAVVSK TAVATI HEVT DM HAVVS I QVIY	LEEFMKT SKELLDW ANNYSKL CMDMALL A EMSKL Section 17 663 KLGVLFT
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab	(439) (584) (521) (577) (586) (625) (478) (623)	FOSAF UDDA YATV DDGU LDSLV 625 YVCK/ SLDST	PRAM VGST PRSY VRAY 630 QMST SAAI	DVWSSE YLAVEG EEVKSS YLIKSG YLIKSG VILAAV HYLNSK	TEKSF  OAFTS  QAFS  640  LGEDI	PEFWKEA YADKIC -RVERS MMVNES VKIS 65 WHIVS-	YGKVRN HAVVSK TAVATI HEVT DM HAVVS I QVIY GTSFVS	LEEFMKT SKELLDW ANNYSKL CMDMALL A EMSKL Section 17 663 KLGVLFT KLVHFCK
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab Human corona 229E pol 1ab	(439) (584) (521) (577) (586) (625) (478) (623) (554)	FOSAF LBDA YATV LBGL LDSL 625 YVCK/ SLDSI FDEG	PRAY VGST PRSY VRAY  630 QMST SAAI	DVWSEF YLAVEG EEVKSS YLIKSG YLIKSG VILAAV HYLNSK GDVAYF	IEKSF QAFCD QAFTS QAFS 640 LGEDI IVDLA VSDGY	PEFWKEA PADKIC -RVERS WMVNFS VKIS 65 WHIVS- QHFSDF FRIMAS	YGKYRN HAVVSK TAVLTI HEVT DM HAVVSI QVIY GTSFVS PNSVLT	LEEFWKT SKELLDV ANNYSKL CMDMALL A EMSKL Section 17 663 KLGVLFT KLVHFEK TAVYKPL
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab	(439) (584) (521) (577) (586) (625) (478) (623) (554) (616)	FOSAF LBDA YATV LDGL LDSL G25 VVCKA SLDSI FDEG FMHD	/PEAY /VGST /PRSY /VRAY 630 (MST SAAI /TVVT	DVWSEF YLAVEG YLIKSG YLIKSG YLIKSG YLIKSG YLIKSG YLIKSG YLIKSG YLIKSG YLKY	IEKSF QAÉCD QAFTS QAFS 640 LGEDI TVDLA VSIGY TGKLA	EFWKEA YADKIC -RVERS WMVNFS VKIS 65 WHIVS- QHFSDF ERDMAS VRFKAL	YGKVRN HAVVSK HEVTDM HAVVSI CVIY GTSFVS PNSVLT GVAVVR	LEEFMKT SKELLDW ANNYSKL CMDMALL A EMSKL Section 17 663 KLGVLFT KLVHFEK TAVYKPL KITEWED
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab Human corona 229E pol 1ab	(439) (584) (521) (577) (586) (625) (478) (623) (554) (616)	FOSAF LBDA YATV LDGL LDSL G25 VVCKA SLDSI FDEG FMHD	/PEAY /VGST /PRSY /VRAY 630 (MST SAAI /TVVT	DVWSEF YLAVEG YLIKSG YLIKSG YLIKSG YLIKSG YLIKSG YLIKSG YLIKSG YLIKSG YLKY	IEKSF QAÉCD QAFTS QAFS 640 LGEDI TVDLA VSIGY TGKLA	EFWKEA YADKIC -RVERS WMVNFS VKIS 65 WHIVS- QHFSDF ERDMAS VRFKAL	G SVVS G SVVS G SVVS G T S T S G T S T S G T S T S G V S V S G V S V S G V S V S G V S V S G V S V S G V S V S G V S V S G V S V S G V S V S G V S V S G V S V S G V S V S G V S V S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S V S S G V S S S G V S S S S S S S S S S S S S S S S S S	LEEFMKT SKELLDM ANNYSKL CMDMALL A EMSKL Section 17 663 KLGVLFT KLVHFFK TAVYKPL KLTEWED KIVHFF
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab	(439) (584) (521) (577) (586) (625) (478) (623) (554) (616) (625)	FOSAL TODAL TODAL  625 VCK SLOSI FOEG FMHD FLD	/PRAY /VGST /PRSY /VRAY 630 \QMST \SAAI /TVVT /KVAT LSVAI	DVWSEF YLAVEG YLIKSG YLIKSG YLIKSG YLIKSG YLIKSG YLIKSG YLIKSG YLIKSG YLKY	IEKSF QAFTS QAFTS 640 LGEDI IVOLA VSIGY TGKLA	EFWKBA YADKIC -RVERS MMVNFS VKIS 65 WHILVS- OHFSDF ERIMAS VRFKAL	YGKVRN HAVVSK TAVLTI HEVTOM HAVVSI O G G G G G G G G G G G G G G G G G G	LEEFMKT SKELLDW ANNYSKL CMDMALL A EMSKL Section 17 663 KLGVLFT KLVHFEK TAYYKPL KTTEWED KIVHFF Section 18
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus	(439) (584) (521) (577) (586) (625) (478) (623) (554) (616) (625)	FOSAI VATV DOGU LDSLV 625 VVCK/ SLDSI FDEG FMHD FLD 1	PRAY VGST PRSY VRAY 630 QMST SAAI TTVVT KVAT LSVAI	DVWSSF YLAVEG EEVKSS YLIKSG YLIKSG YLIKSG VILAAV HYLNSK GDVAYF KYVKKY YLAAV	IEKSF QATCD QATS QAFS 640 LGEDI TVDLA VSDGY TGKLA IGDLA 680	EFWKBA YADKIC -RVERS MMVNFS VKIS 65 WHIVS- QHFSDF ERIMAS VRFKAL	YGKVRN HAVVSK TAVLTI HEVTOM HAVVSI 50 QVIY GTSFVS PNSVLT GVAVVR G SVVS	LEEFMKT SKELLDW ANNYSKL CMDMALL A EMSKL Section 17 663 KLGVLFT KLVHFEK TAYYKPL KITEWED KIVHFF Section 18 702
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab	(439) (584) (521) (577) (586) (625) (623) (616) (625) (664) (514)	FOSAF LDDL YATV LDGL LDSL EDSL SLDSI FDEG FMHD FLD I	PRAY VGST PRSY 630 QMST SAAI TTVVT KVAT LSVAI	DVWSCF YLAVEG EEVKSS YLIKSG YLIKSG VILAAV HYLNSK GDVAYF KYVKKV YLAAV	IEKSF QAFTS QAFTS 640 LGEDI IVDLA WSDGY TGKLA IGDLA 680 QEKRA	EFWKEA YADKIC -RVERS MMVNTS VKIS 65 WHLVS- QHFSDF ERIMAS VRFKAL FRLMA	YGKVRN HAVVSK TAVLTI HEVTOM HAVVST  OCVTY GTSFVS PNSVLT GVAVVR G SVVS 690 TFCVLK	LEEFMKT SKELLDW ANNYSKL CMDMALE A EMSKL Section 17 663 KLGVLFT KLVHFEK TAVYKPL KLTEWED KIVHFF Section 18 702 GVAQHCF
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab	(439) (584) (521) (577) (586) (625) (623) (554) (616) (625) (664) (514) (662)	FOSAF TODELY LDSLY 625 YVCKA SLDSI FDEG FMHD FLD I 664 KVVD TFTT	PRAY VGST VRAY  630 VMST SAAI VTVVT KVAT LSVAI 670 FCDKH	DVWSCF YLAVEG EEVKSS YLIKSG YLIKSG YLIKSG YLAAV HYLNSK GDVAYF KYVKKY YLAAV	IEKSF QAFTS QAFTS 640 LGEDI IVDLA WSDGY TEKLA 1GDLA 680 QEKRA HWEHG	EFWKEA YADKIC -RVERS MMVNTS VKIS 65 WHIVS- QHFSDF ERIMAS VRFKAL FRLMA	YGKVRN HAVVSK TAVLTI HEVTOM HAVVST  OCVIY GTSFVS PNSVLT GVAVVR G SVVS 690 TFCVLK SDIYEV	LEEFWKT SKELLDW ANNYSKL CMDMALE A EMSKL Section 17 663 KLGVLFT KLVHFEK TAVYKPL KLTEWED KLVHFF Section 18 702 GVAQHCF KNTERYA
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab Human corona 229E pol 1ab	(439) (584) (521) (577) (586) (625) (623) (616) (625) (664) (514) (662) (593)	FLD I	PRAY VOST VRAY  630 VMSI STAI VVAT LSVAI 670 FCDKH STALA XNVMG	DVWSCF YLAVEG EEVKSS YLIKSG YLIKSG YLIKSG YLAAV HYLNSK GDVAYF KYVKKV YLAAV WKGFCV TRPEKK	IEKSF  QAFTS  QAFTS  640  LGEDI  IVDLA  VSDGY  TGKLA  680  OEKRA  PTTVI	PEFWKEA PADKIC -RVERS MMVNTS OFF OHFSDF ERIMAS VRFKAL FRLMA KLIVTE AVIVE	YGKVRN HAVVSK TAVLTI HEVTOM HAVVSI  OOCVIY GTSFVS GNAVVR G SVVS 690 TFCVLK AVLFVN	LEEFMKT SKELLDW ANNYSKI CMDMALE A EMSKL Section 17 663 KLGVLFT KLVHFEK TAVYKPL KLVHFF SECTION 18 702 GVAQHCF KNIERYA DKLTEFQ
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab	(439) (584) (521) (577) (586) (625) (623) (616) (625) (664) (514) (662) (593)	FOSAF LDDL YARV LDSL E25 YVCK SLDSI FDEG FMHD FLD I 664 KVVC FAFN LAVE	PRAY VGST PRSY 630 QMST SAAI TVVE KKVAT LSVAI 670 FCDKH STALA KNYMG	DVWSCF YLAVEG EEVKSS YLIKSG YLIKSG VILAAV HYLNSK GDVAYF KYVKKV YLAAV WKGFCV EAWYLF TRPEKK AGWLCY	IEKSF QAFCD QAFTS 640 LGEDI IVDLA VSDGY TGKLA G80 QEKRA PTTVI QLVNG	PEFWKEA PADKIC -RVERS MMVNTS OFF OHFSDF ERIMAS VRFKAL FRLMA KLIVTE AVIVE	YGKVRN HAVVSK TAVATI HAVVSI HAVVSI GOOVIY GVAVVR GVAVVR GSVVS 690 TFCVLK AVLEVN GVITEV	LEEFWKT SKELLDW ANNYSKT CMDMALI A EMSKL Section 17 663 KLGVLFT KLVHFEK TAVYKPL KTTEWED KIVHFF Section 18 702 GVAQHCF KNTERYA DKLTEFQ QEWPELV

	ANTICE COLUMNIA CONTRACTOR						Section 19
	(703)	703	,710		20	,730	741 GGVHKLVQD
avian infectious bronchitis pol 1ab	(553)	QLLLDAI	HSLYK	SFKKCA	LGRIH	GDLLFWK	GGVHKIVQD
bovine coronavirus pol 1ab	(701)	SAVAÇAF	RSVAK	VVLDSL	RVTFI	DGLSCFK	IGRRETCUS
Human corona 229E pol 1ab	(632)	LDYSIDV	IDNEI	IVKPNI	SICVP	LYVRDYV	DKWDDFCRQ
Murine hepatitis pol 1ab	(694)	KNEVOKE	KAPPK	VLIDSM	ISVŠIL:	SGLTVVK	TASNRVCLA
Consensus	(703)	VSDAF	KSLFK	VVKDSI	SVSII	GLS FK	
		A STATE OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE	MMMMM decements of the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second	·			- Section 20
	(742)	742	,750		760	.770	780
avian infectious bronchitis pol 1ab	(592)	<b>E</b> D			·		
bovine coronavirus pol 1ab	(740)	GSKIYEV	ERGLI	нѕѕотг	LDVYD.	LÉMPSQV(	QKAKQKPIY
Human corona 229E pol 1ab	(671)	Y另	-	-			
Murine hepatitis pol 1ab	(733)	GSKVYEV	VQKSI	SAYVME		APCLVGE:	IEP
Consensus	(742)	GSKIYEV	L	A LP	L D	$\mathbf{T}$	
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	(781)	781	,790	y producer and the second second second second second second second second second second second second second	800		819
avian infectious bronchitis pol 1ab	(594)		EI	WFDAID	SVDVE	DIGVVQE	KSIDFEVED
bovine coronavirus pol 1ab	(779)	LKGSGSD	FSLAD	SVVEVV	TSTA	PCGYSEP	PKWADKICI
Human corona 229E pol 1ab	(673)	***	NES	WFEDDY	RAFIS	VI/DIT DA	AVKAAESKA
Murine hepatitis pol 1ab	(766)		AVFED	DAADAA	KAPIL	YOGCCKE	PTSFEKICI
Consensus	(781)		E D	MAADAA	SA LT	LGISDP:	PSTADKICI
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	(820)	820	830		840	and the last right property and the state and the section between the state and the section between the state and the section between the state and the section between the section between the state and the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the section between the	858
avian infectious bronchitis pol 1ab	(623)	DVTLPEN	QPGHM	VQIEDD	GKNYM	FFRFKKD	858 ENIYYTPMS
bovine coronavirus pol 1ab	(623) (818)	DVTLPEN VDNVYMA	QPGHM KAGDK	VQIEDD YYBVVV	GKNYM DG-HV	SLLDQAW	858 ENIYYTPMS RVPCAGRRV
bovine coronavirus pol 1ab Human corona 229E pol 1ab	(623) (818) (703)	DVTLPEN VDNVYMA FVDTIVP	QPĞHM KAGDK PÖPSI	VQIEDD YYPVVV LKVIDG	GKNYM DG-HW GKIWN	STTDOVM	858 ENIYYTPMS RVPCAGRRV SWRDWLKSL
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab	(623) (818) (703) (798)	DVTLPEN VDNVYMA FWDTIMP VDKLYMA	QPGHM KAGDK POPSI KCGDQ	EXPVVV LKVIDG YYPVVV	GKNYM DG-HV GKIWN DHDTV	SVERDOCK SVERDVN SELLDOAM	858 ENIYYTPMS RVPCAGRRV SWRDWLKSL RFPCAGKRV
bovine coronavirus pol 1ab Human corona 229E pol 1ab	(623) (818) (703) (798)	DVTLPEN VDNVYMA FWDTIMP VDKLYMA	QPGHM KAGDK POPSI KCGDQ	EXPVVV LKVIDG YYPVVV	GKNYM DG-HV GKIWN DHDTV	SVERDOCK SVERDVN SELLDOAM	858 ENIYYTPMS RV PCAGRRV SWRDWLKSL RFPCAGKKV RVPCAGKKV
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab	(623) (818) (703) (798) (820)	DVTEPEN VDNVYMA FVDTIVP VDKEYMA VV LYMA	QPGHM KAGDK POPSI KCGDI	VYPVVV LKVIDG FYPVVV VYPVVV	GKNYM DG-HV GKIWN DNDTV GK WV	SVERDOCK SVERDVN SELLDOAM	858 ENIYYTPMS RVFCAGRRV SMRDWLKSL RFPCAGKKV RVFCAGKKV — Section 23
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus	(623) (818) (703) (798) (820)	DVTLPEN VDNWYMA FVDTIVP VDKLYMA VV LYMA	QPGHM KAGDK POPSI KCGDQ KCGDI	VQIEDD FYPVVV VYPVVV VYPVVV	GKNYM DG-HW GKIWN DNDTV GK WV	SLLDOAM SVEKNVN SVEDOCW SVLDQ W	858 ENIYYTPMS RVPCAGRRV SWRDWLKSL RFPCAGKRV RVPCAGKKV — Section 23
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitls pol 1ab	(623) (818) (703) (798) (820) (859) (662)	DVTEPEN VDNWYMA FWDTIVP VDKEYMA VV LYMA 859 QUGAINV	OPGHM KAGDK POPSI REGDO KCGDI 87	VQIEDE YYPYV LKYFDG FKPVVV VYPVVV 'O GKTVTF	GENYM DG-HV GKIWN DHDTV GK WV 880 GETTV	ST LDOAW SVEKNVN SVLDOCW SVLDQ WI	858 ENIYYTPMS RVPCAGRRV SMRDWLKSL RFPCAGKKV RVPCAGKKV — Section 23 897
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitls pol 1ab bovine coronavirus pol 1ab	(623) (818) (703) (798) (820) (859) (662) (856)	DVTEPEN VDNWYMA FWDTIWP VDKEYMA VV LYMA 859 QHGAINV TFKEQFT	OPGHM KAGDK POPSI KCGDO KCGDI KCGDI VCKAG VNETA	VOIEDE YYPYVY LKYFDG FKFVVV VYPVVV O GKTVTF STPKTI	GKNYM DG-HW GKIWN ONDTV GK WV  880 GETTV KVFYE	DEIPPPDI GVLDQCW GVLDQCW GVLDQCW GVLDQCW	858 ENIYYTPMS RVPCAGRRV SMRDWLKSL RFPCAGKKV RVPCAGKKV — Section 23 897 VVPIKVSTE ILNTACGVF
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab Human corona 229E pol 1ab	(623) (818) (703) (798) (820) (820) (859) (662) (856) (742)	DVTLPEN VDNMYMA FWDTIVP VDKLYMA VV LYMA 859 QUGAINV TFKEQFT KENLTQQ	OPGHM KAGDK POPSI KCGDO KCGDI VCKAG VNETA GLLGT	VOIEDD YYPYVY LKVIDG FYPVVV VYPVVV O GKTVTF STPKTI CAKRFK	GKNYM DG-HW DG-HW GKIWN GK WV  880 GETTY KVFYE	CEIPPPO CEIPPPO CEIPPPO COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW COLDO CW CW CW CW CW CW CW CW CW CW CW CW CW	858 ENIYYTPMS RVPCAGRRV SMRDWLKSL RFPCAGKKV RVPCAGKKV — Section 23 897 VVPIKVSIE ILNTACGVF
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab	(623) (818) (703) (798) (820) (859) (662) (856) (742) (837)	DVTLPEN VDNMYMA FVDTIVE VDKLYMA VV LYMA 859 QLGAINV TEKEQET KENLTQQ EFNDKEK	OPGHM KAGDK POPSI KCGDO KCGDI VCKAG VNETA GLLGT	VOIEDD YYPYVV LKVIDG FYPVVV VYPVVV O GKTVTF STPKTI CAKRFK ST-RKI	GKNYM DG-HW GKIWN GK WV  880 GETTV KVFYE RWLGI KHTFA	JLLDOAW JVEKNVN JVEDOCW JVLDQ W JVLDQ W JVLDQ LDKDENT JVLEAXNA LDATEDS	858 ENIYYTPMS RVPCAGRRV SWRDWLKSL RFPCAGKKV RVPCAGKKV Section 23 897 VVPIKVSTE TINEACGVF FLDTVVSTV
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab Human corona 229E pol 1ab	(623) (818) (703) (798) (820) (820) (859) (662) (856) (742)	DVTLPEN VDNMYMA FVDTIVE VDKLYMA VV LYMA 859 QLGAINV TEKEQET KENLTQQ EFNDKEK	OPGHM KAGDK POPSI KCGDO KCGDI VCKAG VNETA GLLGT	VOIEDD YYPYVV LKVIDG FYPVVV VYPVVV O GKTVTF STPKTI CAKRFK ST-RKI	GKNYM DG-HW GKIWN GK WV  880 GETTV KVFYE RWLGI KHTFA	JLLDOAW JVEKNVN JVEDOCW JVLDQ W JVLDQ W JVLDQ LDKDENT JVLEAXNA LDATEDS	858 ENITYTPMS RVPCAGRRV SWRDWLKSE RFPCAGKKV RVPCAGKKV Section 23 897 VVPIKVSIE ILNEACGVF FLDEVVSTV VLSKACSEE
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab	(623) (818) (703) (798) (820) (859) (662) (856) (742) (837) (859)	DVTLPEN VDNM YMA FVDTIVP VDKLYMA VV LYMA  859 QLGAINV TEKEQET KLULTQQ EFNOKPK LND P	QPGHM KAGDK POPSI KEGDO KCGDI VCKAG VNETA VNETA VRKTP V KIA	VOIEDD YYPVVV FYPVVV VYPVVV OGETVTE STPKTI CAKREK ST-RKT	GKNYM DG-HV GKIWN ONDTV GK WV  880 GETTV KVFYE KWLGI KITFA	SLLDOAM SVEKNVN SVLDOCW SVLDQ W  QEIPPPD LDKDINT GLEAXNA LDATEDS LD FNS	858 ENIYYTPMS RV PCAGRRV SWRDWLKSE RF PCAGKKV RV PCAGKKV — Section 23 897 WV PIKV SIE ILNTACGVF FLDEVV STV VL SKACSEE VL TAVSIF — Section 24
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus	(623) (818) (703) (798) (820) (859) (662) (856) (742) (837) (859)	DVTEPEN VDNWYMA FVDTIVP VDKLYMA VV LYMA  859 QUGAINV TEKEQET KENLTQQ EFNOKPK LND P	QPGHM KAGDK POPSI REGDO KCGDI 87 VCKAG VNETA GLLGT VRKTP V KIA	VQIEDD YYPVVV FYPVVV VYPVVV GKTVTF STPKTI CAKRFK ST-RKI ST RTI	GKNYM DG-HV GKIWN ONDTV GK WV  880 GETTV KVFYE RWLGI KITFI	SLLDOAM SVEKNVN SVLDOCW SVLDQ W CEIPPPD LDKDINT BLEAXNA LDATEDS LD FNS	858 ENIYYTPMS RV BCAGRRV SYRDWLKSL RF PCAGKKV — Section 23 897 VV PIKV SIE IL NTACGVF FLDEVV STV VL SKACSEE VL TAVSIF — Section 24 936
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab	(623) (818) (703) (798) (820) (859) (662) (856) (742) (837) (859)	DVTLPEN VDNMYMA FVDTIVP VDKLYMA VV LYMA 859 QLGAINV TEKEQET KENLTQQ EFNOKPK LND P	OPGHM KAGDK POPSI KCGDO KCGDI VCKAG VNETA VNETA GLLGT VKIA	VOIEDD YYPYVV LKVIDG FYPVVV VYPVVV GKTVTF STPKTI CAKRFK ST-RKI ST RTI	GKNYM DG-HW DG-HW GKIWN 880 GETTV KVFYE RWLGI KITFI	SLLDOAM VEKNVN SVLDOCW SVLDQ W  QEIPPPD LDKDENT DLEAXNA LDATEDS LD FNS	858 ENITYTPMS RVBCAGRRV SWRDWLKSL RFFCAGKRV RVPCAGKKV Section 23 897 VVPIKVSTE TINTACGVF FLDTVVSTV VLSKACSEE VL TAVSIF Section 24 936
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab	(623) (818) (703) (798) (820) (859) (662) (856) (742) (837) (859)	DVTLPEN VDNMYMA FVDTIVP VDKLYMA VV LYMA 859 QLGAINV TEKEQET KENLTQQ EFNOKPK LND P	OPGHM KAGDK POPSI KCGDO KCGDI VCKAG VNETA VNETA GLLGT VKIA	VOIEDD YYPYVV LKVIDG FYPVVV VYPVVV GKTVTF STPKTI CAKRFK ST-RKI ST RTI	GKNYM DG-HW DG-HW GKIWN 880 GETTV KVFYE RWLGI KITFI	SLLDOAM VEKNVN SVLDOCW SVLDQ W  QEIPPPD LDKDENT DLEAXNA LDATEDS LD FNS	858 ENITYTPMS RVBCAGRRV SWRDWLKSL RFFCAGKRV RVPCAGKKV Section 23 897 VVPIKVSTE TINTACGVF FLDTVVSTV VLSKACSEE VL TAVSIF Section 24 936
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitls pol 1ab bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab Human corona 229E pol 1ab	(623) (818) (703) (798) (820) (859) (662) (856) (742) (837) (859)	DVTLPEN VDNMYMA FVDTIVP VDKLYMA VV LYMA 859 QLGAINV TEKEQET KENLTQQ EFNOKPK LND P	OPGHM KAGDK POPSI KCGDO KCGDI VCKAG VNETA VNETA GLLGT VKIA	VOIEDD YYPYVV LKVIDG FYPVVV VYPVVV GKTVTF STPKTI CAKRFK ST-RKI ST RTI	GKNYM DG-HW DG-HW GKIWN 880 GETTV KVFYE RWLGI KITFI	SLLDOAM VEKNVN SVLDOCW SVLDQ W  QEIPPPD LDKDENT DLEAXNA LDATEDS LD FNS	858 ENITYTPMS RVECAGERV SMRDWLKSL RFFCAGKEV RVPCAGKKV Section 23 897 VVPIKVSTE TINEACGVF FLDTVVSTV VLSKACSEE VL TAVSIF Section 24 936
bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab Human corona 229E pol 1ab Murine hepatitis pol 1ab Consensus  avian infectious bronchitis pol 1ab bovine coronavirus pol 1ab	(623) (818) (703) (798) (820) (859) (662) (856) (742) (837) (859) (898) (701) (895) (781) (875)	DVTLPEN VDNMYMA FVDTIVP VDKLYMA VV LYMA 859 QLGAINV TEKEQET KENLTQQ EFNOKPK LND P	QPGHM KAGDK POPSI KEGDQ KCGDI VCKAG VNETA VRKTP V KIA MEEFY	VQIEDD YYPVVV LKVIDG FYPVVV  O GKTVTF STPKTI CAKRFK ST-RKI ST RTI 910TTFK AVVIDAI DVVLDA	GKNYM DG-HW DG-HW GKIWN SKUWN 880 GETTV KVFYE RWLGT KITFI 92 KAYKE LEEKI	SLLDOAM SVEKNVN SVLDOCW SVLDOCW SVLDOCW SVLDOCW SVLDOCW OEIPPPD LDKDENT ULEAYNA LDATEDS LD FNS OPIEVDTD SPCKELE AFDKPYII	858 ENIYYTPMS RV BCAGRRV SYRDWLKSL RF PCAGKKV — Section 23 897 VV PIKV SIE IL NTACGVF FLDEVV STV VL SKACSEE VL TAVSIF — Section 24 936

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(937)	937	,950	,960 975
avian infectious bronchitis pol 1ab (733)	TAEKWCDDTK	FPCAPEPPPEE	NVALVDKNGKLLDCIKS
bovine coronavirus pol 1ab (934)	LOKLEDNSLEL	EDEAGEEVLAS	KLYCAFTAPEDDDFLEE
Human corona 229E pol 1ab (807)	ENKTHAEWIE	<b>PHNDRIKSFS</b>	TFESAYMPIADPTHEDI
Murine hepatitis pol 1ab (914)	DORLAGDYVYT	FDEGGDEVIAP	RMYCSFSAFDDEDCVAA
Consensus (937)	LNKLEADWLFL		KLYCAFSAPDDDDCIDA
			Section 26
(976)	976	990	1000 1014
avian infectious bronchitis pol 1ab (772)	CHLIYEDYESD	DDIEEEDAEEC	DTDSGEAEECDTN
bovine coronavirus pol 1ab (973)	SGVEEDDVEGE	ETDLEVTSAGE	PCVASEQEE
			DEHVEYKKDGVYYP
Murine hepatitis pol 1ab (953)	DANDYDENOD	DAEDSAVIVAD	TQEEDGVAKGQVEADSE
Consensus (976)	D VE DD E D	D DDSAILAAD	D DA E EEG Section 27
/404EY	4045 4000	,1030	
avian infectious bronchitis pol 1ab (807)	1015 ,1020		1040 1053
bovine coronavirus pol 1ab (1004)	CGTTT	TERPEDIKVIA	Degreensemenewate
Human corona 229E pol 1ab (882)	GNCONT	LDAYELKYYCC	NAC BELLIAMENT LE DITA
Murine hepatitis pol 1ab (992)	TOVAHEGSORE	TAPPNAVAGOT	PARABETEVE PROPERTY
Consensus (1015)	S SED	L EDD AA A	IQ AEDVEV D ADLE
			Section 28
(1054) avian infectious bronchitis pol 1ab (838) bovine coronavirus pol 1ab (1039)	1054 ,1060	,1070	,1080 1092
avian infectious bronchitis pol 1ab (838)	YSVYNGCIVHK	DALDVVNLPSG	The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s
bovine coronavirus pol 1ab (1039)	end of the contract of 3 and 5		(
DOVING COLORIBATIOS POT TOD (1000)	SVIQDYENVCF	EFYTTEP	Some state was time to the time to the time to the time to the time to the time to the time to the time time time time time time time tim
Human corona 229E pol 1ab (916)	RVKLCFEFEDE	KLVDVCEKATG	The state of the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same t
Human corona 229E pol 1ab (916) Murine hepatitis pol 1ab (1031)	RVKLCFEFEDE GTAEAKATVGA	KLVDVCEKAT G DAVDACEDOVE	The state of the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same term to the same t
Human corona 229E pol 1ab (916) Murine hepatitis pol 1ab (1031)	RVKLCFEFEDE	KLVDVCEKAT G DAVDACEDOVE	AFEIEKVEDSILDELQT
Human corona 229E pol 1ab (916) Murine hepatitis pol 1ab (1031) Consensus (1054)	RVKLCFEFEDE GTAEAKATVCA VI FE VC	KLVÖVCEKATË DAVDACEDOVE DAVDVCP IG	AFEIEKVEDSILDELQT Section 29
Human corona 229E pol 1ab (916) Murine hepatitis pol 1ab (1031) Consensus (1054)	RVKLCFEFEDE GTAEAKATVCA VI FE VC	KLVÖVCEKATË DAVDACEDOVE DAVDVCP IG	AFEIEKVEDSILDELQT Section 29
Human corona 229E pol 1ab (916) Murine hepatitis pol 1ab (1031) Consensus (1054)	RVKLCFEFEDE GTAEAKATVCA VI FE VC	KLVÖVCEKATË DAVDACEDOVE DAVDVCP IG	AFEIEKVEDSILDELQT Section 29
Human corona 229E pol 1ab (916) Murine hepatitis pol 1ab (1031) Consensus (1054)	RVKLCFEFEDE GTAEAKATVCA VI FE VC	KLVÖVCEKATË DAVDACEDOVE DAVDVCP IG	AFEIEKVEDSILDELQT Section 29
Human corona 229E pol 1ab (916) Murine hepatitis pol 1ab (1031) Consensus (1054)  (1093) avian infectious bronchitis pol 1ab (860) bovine coronavirus pol 1ab (1057) Human corona 229E pol 1ab (938)	RVKLCFEFEDE GTAEAKATVCA VI FE VC	KLVDVCEKATĞ DAVDACEDQVE DAVDVCP İG 1110	AFEIEKVEDSILDELQT  Section 29  ,1120
Human corona 229E pol 1ab (916)  Murine hepatitis pol 1ab (1031)  Consensus (1054)  (1093)  avian infectious bronchitis pol 1ab (860)  bovine coronavirus pol 1ab (1057)  Human corona 229E pol 1ab (938)  Murine hepatitis pol 1ab (1070)	RVKLCFEFEDE GTAEAKATYCA VI FE VC  1093 .1100 ELNAPADKTYE	KLVDVCEKATĞ DAVDACEDQVE DAVDVCP İG 1110	AFEIEKVEDSILDELQT Section 29 1120 1131
Human corona 229E pol 1ab (916) Murine hepatitis pol 1ab (1031) Consensus (1054)  (1093) avian infectious bronchitis pol 1ab (860) bovine coronavirus pol 1ab (1057) Human corona 229E pol 1ab (938)	RVKLCFEFEDE GTAEAKATYCA VI FE VC  1093 .1100 ELNAPADKTYE	KLVDVCEKATĞ DAVDACEDQVE DAVDVCP İG 1110	AFEIEKVEDSILDELQT  Section 29  1120 1131
Human corona 229E pol 1ab (916) Murine hepatitis pol 1ab (1031) Consensus (1054)  (1093) avian infectious bronchitis pol 1ab (860) bovine coronavirus pol 1ab (1057) Human corona 229E pol 1ab (938) Murine hepatitis pol 1ab (1070) Consensus (1093)	RVKLCFEFEDE GTAEAKATYCA VI FE VC  1093 .1100  ELNAPADKTYE	KLVDVCEKATG DAVDACEDQVE DAVDVCP IG	AFEIEKVEDSILDELQT  Section 29  1120 1131
Human corona 229E pol 1ab (916) Murine hepatitis pol 1ab (1031) Consensus (1054)  (1093) avian infectious bronchitis pol 1ab (860) bovine coronavirus pol 1ab (1057) Human corona 229E pol 1ab (938) Murine hepatitis pol 1ab (1070) Consensus (1093)	RVKLCFEFEDE GTAEAKATYCA VI FE VC  1093 .1100  ELNAPADKTYE	KLVDVCEKATG DAVDACEDQVE DAVDVCP IG	AFEIEKVEDSILDELQT  Section 29  1120 1131
Human corona 229E pol 1ab (916) Murine hepatitis pol 1ab (1031) Consensus (1054)  (1093) avian infectious bronchitis pol 1ab (860) bovine coronavirus pol 1ab (1057) Human corona 229E pol 1ab (938) Murine hepatitis pol 1ab (1070) Consensus (1093)	RVKLCFEFEDE GTAEAKATYCA VI FE VC  1093 .1100  ELNAPADKTYE	KLVDVCEKATG DAVDACEDQVE DAVDVCP IG	AFEIEKVEDSILDELQT  Section 29  1120 1131
Human corona 229E pol 1ab (916) Murine hepatitis pol 1ab (1031) Consensus (1054)  (1093) avian infectious bronchitis pol 1ab (860) bovine coronavirus pol 1ab (1057) Human corona 229E pol 1ab (938) Murine hepatitis pol 1ab (1070) Consensus (1093)  (1132) avian infectious bronchitis pol 1ab (862) bovine coronavirus pol 1ab (1062)	RVKLCFEFEDE GTAEAKATVCA VI FE VC  1093 1100  ELNAPADKTYE  1132 1140 TFVVN LDLYVPKATEN	KLVDVCEKATE DAVDACEDQVE DAVDVCP IG	AFEIEKVEDSILDELQT  Section 29  ,1120
Human corona 229E pol 1ab (916) Murine hepatitis pol 1ab (1031) Consensus (1054)  (1093) avian infectious bronchitis pol 1ab (860) bovine coronavirus pol 1ab (1057) Human corona 229E pol 1ab (938) Murine hepatitis pol 1ab (1070) Consensus (1093)  (1132) avian infectious bronchitis pol 1ab (862) bovine coronavirus pol 1ab (1062)	RVKLCFEFEDE GTAEAKATVCA VI FE VC  1093 1100  ELNAPADKTYE  1132 1140 TFVVN LDLYVPKATEN	KLVDVCEKATE DAVDACEDQVE DAVDVCP IG	AFEIEKVEDSILDELQT  Section 29  ,1120
Human corona 229E pol 1ab (916)  Murine hepatitis pol 1ab (1031)  Consensus (1054)  (1093)  avian infectious bronchitis pol 1ab (860) bovine coronavirus pol 1ab (1057) Human corona 229E pol 1ab (938)  Murine hepatitis pol 1ab (1070)  Consensus (1093)  (1132)  avian infectious bronchitis pol 1ab (862) bovine coronavirus pol 1ab (1062) Human corona 229E pol 1ab (942) Murine hepatitis pol 1ab (1109)	RVKLCFEFEDE GTAEAKATYCA VI FE VC  1093 1100 ELNAPADKTYE  1132 1140 TFYVN LDLYVPKATKN HEG CGFYSBAIERT	KLVDVCEKATE DAVDACEDQVE DAVDVCP IG	AFEIEKVEDSILDELQT  Section 29  ,1120

				Section 31
(1171)	1171	,1180	.1190	1209
avian infectious bronchitis pol 1ab (884)				
bovine coronavirus pol 1ab (1101)	LYKQQYSÇ	EFVDTLVNK	FLANTVVPQGG	YVADFAYWFLT
Human corona 229E pol 1ab (972)	YDEEGGNE	<b>ESTPVMISE</b>	WELSVQQAQQE	ATLPDIAEDVV
Murine hepatitis pol 1ab (1148)	SYKAGYD	CFVDKLVKS	<b>VEKSTILPOGG</b>	YVADEAYEELS
Consensus (1171)	LYK GYAÇ	FAD FAN	IPLSIILPQGG:	YVADFAYFFLT
		· · · · · · · · · · · · · · · · · · ·		Section 32
(1210)	1210 '	,1220	,1230	1248
avian infectious bronchitis pol 1ab (923) bovine coronavirus pol 1ab (1140)	EQVVVEDÇ	PELPYVEQUQ	DVVVYTPTDLE	VAKETAEEVDE
bovine coronavirus pol 1ab (1140)	LCDWQCVZ	YWKCIKCIL	ALKIKGIDAME	FYGDYVSHVCK
Human corona 229E pol 1ab (1011)	DOVEEVNS	INDIETVEV	KHDVSPFEMPE	EELNGLKIEKQ
Murine hepatitis pol 1ab (1187)				
Consensus (1210)	DQVF F	WKCIECDLI	DLKL GLDAMF	FYGDVVSHVCK
+				Section 33
(1249)	1249	,1260	,1270	1287
avian infectious bronchitis pol 1ab (962)	FILIFAVE	PKEEVVSQKD	SAQIKQEPIQV	VKPORE-KK
bovine coronavirus pol 1ab (1179)				
Human corona 229E pol 1ab (1050)	LDNNCWVN	SVMLQIQLT	SIEDGDYAMQE.	FKMG
Murine hepatitis pol 1ab (1226)				
Consensus (1249)	CGNSM LI	SVDVPFTLH	GALKDD FCQF	
A STRUMAN CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF C				Section 34
(1288)		1300	,1310	1326
avian infectious bronchitis pol 1ab (998)	for Contracting a contract of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the 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bovine coronavirus pol 1ab (1218)	VVDVNDSI	ISMAVVDOKO	IDDHRVISITS	DKEDETICHCW
Human corona 229E pol 1ab (1082)		PONATO PARTALONGAPON SOTOMOR MEN. 1115	error and and and and and and and and and and	
Murine hepatitis pol 1ab (1265)				
Consensus (1288)	ADAND F	ISMAVVDGKQ:	ID VT	DKFDFIIGHGM
A Silver Maria				Section 35
(1327)		1340	1350	1365
avian infectious bronchitis pol 1ab (1000)	KEKVKPAI	CEKPKFLEY	KTCVGDLTVVE	AKAMDEFKEFC
bovine coronavirus pol 1ab (1257)	SESMIT	LEAQLYGSCI	TENVCENKGDI	IKVSKRVKAEV
Human corona 229E pol 1ab (1082)		CVAKMIERCY	TAEQUIRGAMG	DVGLCMYRLLK
Murine hepatitis pol 1ab (1304)				
Consensus (1327)	SESMSEE	STAGPIGSCI.	TPNVCFVKGDI	Section 36
(4000)	4000	4000	4000	
(1366) avian infectious bronchitis pol 1ab (1039)	1300	1380	1390	1404
avian injectious pronchilis poi 1ab (1039)	LVNAANE!	THESEVAK	BTADECGTDEN	EICEUIVKKHE
bovine coronavirus pol 1ab (1296)	VVNEANGI	INALGUUVAK.	ATAVARGUULV	KETTUHVKOKU
Human corona 229E pol 1ab (1114) Murine hepatitis pol 1ab (1343)	DENTERM!	A PAUL A COUTS	GKTER SCHALLE	CIPERKAPPIN
			AIAE AGA FV	
Consensus (1300)	TAMEWMPI	IMANGAGVAK.	arne wew EA	VE LI DHAKAUA

					Section 37
(1405)	1405 ,1410	) ,1	1420	,1430	1443
avian infectious bronchitis pol 1ab (1078)				. — — — — — — — —	
bovine coronavirus pol 1ab (1335)	VCATGDCY	VSTGGKLC	IKTVLNVVGE	DARTOGKO	SYALLE
Human corona 229E pol 1ab (1153)	TOLNOWAE	RMCTIROI	LOGTILIFVOC	KPEP	VNP
Murine hepatitis pol 1ab (1382)	VCQVGECY	ESAGGKLO	KKVLNIVGE	DARGHGKO	CYSLIE
Consensus (1405)	VCQ GDCY	SGGKLO	CK VLNIVGE	DAR GKO	YALLE
,		•			
(1444)	1444 .14	50			
(1444) avian infectious bronchitis pol 1ab (1082) bovine coronavirus pol 1ab (1374)		TIVTEP S	SEVKETOCTR	NVÄGPRÄG	THENNO
bovine coronavirus pol 1ab (1374)	RVVKHTNK	YDCVVTT	Teastrave	Shiermur	Henark
Human corona 229E pol 1ab (1185)	VŠEVVKPV	OSSTERGI	AVSCULHVOYN	ITVSONLC	DGEGVN
Murine hepatitis pol 1ab (1421)	RAYOHTNE	C IS N VI VI I ON T	TSACTESUE	TID VINTON	TOVER
Consensus (1444)	RAY HINK	CD VVTTI	TTSACTESUE	PROPERTY	T.C T. K
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(1483)	1483 ,1	490	.1500	.1510	1521
avian infectious bronchitis pol 1ab (1110)	KTVAAVKN	VI.VDGXXX	TVWDWEST.	T FESSO FESS	real nake
bovine coronavirus pol 1ab (1413)	OVUTUSNA	or sentes	SKOUZUZNIEG	TRKINEDI	SEMMCD
Human corona 229E pol 1ab (1224)	KTOPMTN-	D	T.NTTCTKDA	DAMMANDEL	CUPPTE
Murine hepatitis pol 1ab (1460)	NVITUSON	nnnenvi	KCOMPANY	TEMETAT	MENTICE
Consensus (1483)	KVVLVSNN	ODDFDVT	AKCOTTT.VDG	TKATATKT	CTNITO
()		72	11105777777	T TOTAL TOTAL	30 714 71 717
					Section 40
(1522)	1522	.1530	.1540		Section 40
(1522) avian infectious bronchitis pol 1ab (1149)		1530 RV11, ES'-	.1540	1550	Section 40 1560
avian infectious bronchitis pol 1ab (1149)	EAFEGCTI	RVLLES		1550	1560
avian infectious bronchitis pol 1ab (1149) bovine coronavirus pol 1ab (1452)	EAFEGCTI SIVYETDA	RVILES NKILLSNI	ovaevstenv	1550 LODVLST	1560 (HDEALD
avian infectious bronchitis pol 1ab (1149) bovine coronavirus pol 1ab (1452) Human corona 229E pol 1ab (1256)	EAFEGCTI SIVYETDE NTVDTTPK	RVLLES NKUTLSNI EEFVVKEI	DVAEVSTENV KLNAFLVHON	1550 LODVLSLE WAFYOGDV	1560 HDJALD
avian infectious bronchitis pol 1ab (1149) bovine coronavirus pol 1ab (1452) Human corona 229E pol 1ab (1256) Murine hepatitis pol 1ab (1499)	BAFEGCTI SIVYETOP NTWOTTPK DVKEVINA	RVLLES NKULLSNI EEFWVKEI CSSLES-E	DVAEVSTENV KLNAFLVHDN LSCEVSSYDV	1550 LODVLSLE VAFYQGDV LOEVEALE	1560 HDJALD DTVVNG
avian infectious bronchitis pol 1ab (1149) bovine coronavirus pol 1ab (1452) Human corona 229E pol 1ab (1256)	BAFEGCTI SIVYETOP NTWOTTPK DVKEVINA	RVLLES NKULLSNI EEFWVKEI CSSLES-E	DVAEVSTFNV KLNAFLVHDN CSCEVSSYDV DL FVSSHDV	.1550 LODVLSLF WAFYQGDV GOEVEALF LQDV ALF	1560 HDIALD DTVVNG HDIQID
avian infectious bronchitis pol 1ab (1149) bovine coronavirus pol 1ab (1452) Human corona 229E pol 1ab (1256) Murine hepatitis pol 1ab (1499) Consensus (1522)	EAFEGCTI STVYETDE NTVDTTPK DVKEVTNA DIVF T A	RVLLES- NKILLSNI EEFVVKEI CSSLFS- LLFS I	DVAEVSTFNV KLNAFLVHDN ISCEVSSYDV DL FVSSHDV	1550 LODVLSLE VAFYQGDV LOEVEALE	1560 HDJALD DTVVNG HDJOTD HDJ LD Section 41
avian infectious bronchitis pol 1ab (1149) bovine coronavirus pol 1ab (1452) Human corona 229E pol 1ab (1256) Murine hepatitis pol 1ab (1499) Consensus (1522)	EAFEGCTI STVYETDE NTVDTTPK DVKEVTNA DIVF T A	RVLLES NKULLSNI EEFWVKEI CSSLES-E	DVAEVSTFNV KLNAFLVHDN CSCEVSSYDV DL FVSSHDV	.1550 LODVLSLF WAFYQGDV GOEVEALF LQDV ALF	1560 HDIALD DTVVNG HDIQID
avian infectious bronchitis pol 1ab (1149) bovine coronavirus pol 1ab (1452) Human corona 229E pol 1ab (1256) Murine hepatitis pol 1ab (1499) Consensus (1522)  (1561) avian infectious bronchitis pol 1ab (1163)	EAFEGCTI STVYETDE NTVDTTPK DVKEVTNA DIVF T A	RVILES- NKHILSNI EEFVVKEI CSSLES- LLFS I	DWAEVSTFNV KLNAFLVHDN ISCEVSSYDV DL FVSSHDV 1580	.1550 LODVLSLF  VAFYQGDV LOEVEALF  LQDV ALF	1560 HDJALD DTYVNG HDJ DD RHDJ LD Section 41 1599
avian infectious bronchitis pol 1ab (1149) bovine coronavirus pol 1ab (1452) Human corona 229E pol 1ab (1256) Murine hepatitis pol 1ab (1499) Consensus (1522)  (1561) avian infectious bronchitis pol 1ab (1163) bovine coronavirus pol 1ab (1491)	EAFEGCTI STVYETDE NTWDTTPK DVKFVDNA DIVF T A	RVLLES- NKHILSNI EEFVVKEI CSSLFS- LLFS I 1570	DWAEVSTFNV KLNAFLVHDN SCEVSSYDV DL FVSSHDV ,1580	1550 LODVLSIF WAFYQGDV LOEVEALF LODV ALF	HDJALD DTVVNG HDJOLD CHDI LD Section 41 1599
avian infectious bronchitis pol 1ab (1149) bovine coronavirus pol 1ab (1452) Human corona 229E pol 1ab (1256) Murine hepatitis pol 1ab (1499) Consensus (1522)  (1561) avian infectious bronchitis pol 1ab (1163) bovine coronavirus pol 1ab (1491) Human corona 229E pol 1ab (1295)	EAFEGCTI STVYETDE NTWDTTPK DVKFVDNA DIVF T A  1561 DDARTFVC VDFDFIVN	RVLLES- NKHILSNI EEFVVKEI CSSLFS- LLFS I 1570 SNVDVVFF	DWAEVSTENV KINAFLVHDN ISCEVSSYDV DL FVSSHDV ,1580 EGWRVVNKEY	1550 LODVLSTF VAFYQGDV LOEVEALF LQDV ALF	1560 HDJALD DTVVNG HDJOLD HDJ LD Section 41 1599 KYFECE
avian infectious bronchitis pol 1ab (1149) bovine coronavirus pol 1ab (1452) Human corona 229E pol 1ab (1256) Murine hepatitis pol 1ab (1499) Consensus (1522)  (1561) avian infectious bronchitis pol 1ab (1163) bovine coronavirus pol 1ab (1491) Human corona 229E pol 1ab (1295) Murine hepatitis pol 1ab (1537)	EAFEGCTI SIVYETOR NTWOTTPK DVKEVINA DIVF T A  1561 DDARTFVC VDFDFIVE DDARVEVC	RVLLES- NKLLLSNI EEFVVKEI CSSLES- LLFS I 1570 SNVDVVEE AANENDAE	DVAEVSTFNV KLNAFLVHDN ISCEVSSYDV DL FVSSHDV ,1580 EGWRVVNKDY HGGGTAKALT	1550 LODVLSLE VAFYQGDV LOEVEALE LQDV ALE S OINGVRIV VYTKGKLO	1560 HDIALD DTVVNG HDEQID RHDI LD Section 41 1599 KYFECP
avian infectious bronchitis pol 1ab (1149) bovine coronavirus pol 1ab (1452) Human corona 229E pol 1ab (1256) Murine hepatitis pol 1ab (1499) Consensus (1522)  (1561) avian infectious bronchitis pol 1ab (1163) bovine coronavirus pol 1ab (1491) Human corona 229E pol 1ab (1295)	EAFEGCTI SIVYETOR NTWOTTPK DVKEVINA DIVF T A  1561 DDARTFVC VDFDFIVE DDARVEVC	RVLLES- NKLLLSNI EEFVVKEI CSSLES- LLFS I 1570 SNVDVVEE AANENDAE	DVAEVSTFNV KLNAFLVHDN ISCEVSSYDV DL FVSSHDV ,1580 EGWRVVNKDY HGGGTAKALT	.1550 LODVLSIF WAFYQGDV LOEVEALF LODV ALF SOURCE VYTKGRLO SVDGVRTI	1560  HDIALD  DTVVNG  HDI QLD  HDI LD  Section 41  1599  KYFECP  KYFECP  KYFECP
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					—— Section 43
(1639)	1639	,1650		,1660	167
avian infectious bronchitis pol 1ab (1182)	LTEDEVK	YRSIVLK	PGDSLC	QFG	QVYAKI
bovine coronavirus pol 1ab (1569)	DIVDGVN	ETNREVE	VGESFC	KSLGNVECD	GVNVTKHKCI
Human corona 229E pol 1ab (1360)	GPRKEKH	ERDILIK	AYNTIC	NEQGTPLTP	ILSCGIFGIF
Murine hepatitis pol 1ab (1615)	CTVDGVN	FRSCCVA	EGEVEC	KTLGSVFCD	GINVIKVRČS
Consensus (1639)	LTVDGVN	FRSILVK	GESFO	KSLGSVFCD	GINVTKHKC
					Section 44
(1678)	1678	,169	90	1700	1710
avian infectious bronchitis pol 1ab (1211)	KEVFTAD	DVEDKE	LYVPTI	DKSILEYYG	LDAQKYVIYI
bovine coronavirus pol 1ab (1608)	INYKGKV	FFØFDNI	SSEDLA	KAVRSSENED	QKELLAYYNI
Human corona 229E pol 1ab (1399)	LETSLEY	LLDVCNT	KEVKNE	TVYTOTEVCK	VKDEVSGLVN
Murine hepatitis pol 1ab (1654)	ATYKCKV	FFOYSOI	BEADIN	/AVKDAFGFÖ	EPOLIKYYTI
Consensus (1678)	IIYKGKV	FFQF NI	SEVDL	AVSDSF FD	LKDLLAYY N
					Section 45
(1717)	1717		730	,1740	175
avian infectious bronchitis pol 1ab (1250)	QTLAQKW	NVQYRDN	ELTLEV	VRDGNCWISS	AIVLEQAAKI
bovine coronavirus pol 1ab (1647)	LVNCSKW	QVVENGK	YETEK	)ANNNCEWNV	SCLMLOSÎNI
Human corona 229E pol 1ab (1438)	VQKVEQP	KIEPK-E	VSVIK	APKPYRVDG	KFSYFTEDLI
Murine hepatitis pol 1ab (1693)	IG-MCKW	SVVVCGN	YFAFK	YNTYDNNAC	ACTMLOHTS I
Consensus (1717)	L M KW	NVVFKGN	YFIFKÇ	ANNNCFINV	ACLMLQAL I
			***************************************		Section 46
(1756)	1756	15 170000 100000000000000000000000000000	,1770	1780	1794
avian infectious bronchitis pol 1ab (1289)					
bovine coronavirus pol 1ab (1686)					
Human corona 229E pol 1ab (1476)	CVADDKP	IVLETDS	MLTLDI	RGLALDNEL	SCVLSAAIK
Murine hepatitis pol 1ab (1731)	KEPKWOW	IQEAWNEE	RSGKPI	REVSLVLAK	GSEKENEPS
Consensus (1756)	KFK FQW	QEAW EF	RSGKP	REVALVLAK	GGFKFGDPSI
			and the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of t		Section 47
(1795)		000	1810	,1820	1833
avian infectious bronchitis pol 1ab (1327)		LAEHFDA	DYTNAE		
bovine coronavirus pol 1ab (1725)					
Human corona 229E pol 1ab (1515)					
Murine hepatitis pol 1ab (1770)	SIDEMRY	VLREADI	SGATĆI	ile fyckogy	KQEQRKGVD
Consensus (1795)	SIDFLRV	V ADI	SGA C	LEIVCKCGV	KQEQRKGVDA
797-1			AND AND AND AND AND AND AND AND AND AND		—— Section 48
(1834)		840	1850	,1860	187:
avian Infectious bronchitis pol 1ab (1360)					
bovine coronavirus pol 1ab (1764)	VMHEGTI	SREDBEI	GYTVD	SCGKKLIHC	VRFDVFFLT(
	The second control of the second	the standard and the state of	Mary Williams		The second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon
Human corona 229E pol 1ab (1551)	DNNVQRC	TRKLNRI	MCDIV	BEILDADAITE	th Λ T ⊇ ⊇ T MC W /
Human corona 229E pol 1ab (1551) Murine hepatitis pol 1ab (1809)	DNNVQRC VMHTGTI	TRKLNRI DKGDIVE	MCDIYO	FRIPADYALP TCGSKLVHC	TOENVEFLICAT

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(1873)	1873	,1880	,18	90	,1900	1911
avian infectious bronchitis pol 1ab (1393)	NNTDEVI	EASLP	YILLFA	DGPATA	DCDEDAV	GTVVFVG
bovine coronavirus pol 1ab (1803)	SNTPASV	KLPKG	VGSANIE	KGDKKG	HYVHVKC	EQSYQLY
Human corona 229E pol 1ab (1590)	SFVGLLK	AAEAK	VITIKVI	EDGVN	HDVTVTT	DKSFEQQ
Murine hepatitis pol 1ab (1848)	SNTPEGR	KLPDD	VVAANTI	TGGSVC	HYTHVKC	KPKYOLY
Consensus (1873)	SNTPELR	KLP	VISANII	DGGAVI	/HYVHVKC	D SYQLY
						Section 50
(1912)	1912	,1920	.1	930	.1940	1950
avian infectious bronchitis pol 1ab (1432)	STNSGHO	YTOAA	OAFDIN	AKORKE	GKKSPYI	TAMETRE
bovine coronavirus pol 1ab (1842)	DASNVKK	VIDVE	PNESDC	YEKNI	OTFKSVI	TTYYTDD
bovine coronavirus pol 1ab (1842) Human corona 229E pol 1ab (1629)	VSVIADE	DKDLS	SAMPSD	INTSEEL	TKAIDWE	WVEEYGE
Murine hepatitis pol 1ab (1887)	DACNVNE	VSEAK	NEEDCI	ŶĿĸĸĹŧ	OTFSSVI	TTEYLDD
Consensus (1912)	DA NV K	VTDAS	GNLSDCI	YLKNLE	COTFSSVI	TTFYLDF
						- Section 51
(1951)	1951	1960		.1970		1989
avian infectious bronchitis pol 1ab (1471)	AFKNETS	LPMAK	OSKGKSI	SVKED	SNLATSS	KASFONE
bovine coronavirus pol 1ab (1881)	VKKTEYN	PDISO	YYCDGG1	YYTOR	TKAOFKI	FERVDGV
Human corona 229E pol 1ab (1668)	KDAVTFA	TVDHS	AFAYES!	AVVNGII	RVLKTSDI	INCWVNAV
Murine hepatitis pol 1ab (1926)	WKCVEYE	PDESO	YYCESGI	YYTKPJ	TKAOFRI	FEKVDGV
Consensus (1951)	VKKVEYA	PDLSO	YYCD SI	(YYT ]		FEKVDGV
						- Section 52
(1990)	1990	.200	0	2010		2028
avian infectious bronchitis pol 1ab (1510)		DSHIY	ESEKVOR	SPÖNFI	KYVSETT	
bovine coronavirus pol 1ab (1920)						
Human corona 229E pol 1ab (1707)	CIALOYS	KPHFI	SOGLDA	WNKEVI	GDVEIFV	AFVYYVA
Murine hepatitis pol 1ab (1965)						
Consensus (1990)	YTNFQLI	GHSI	E LNAKI	LGFD		TEWPTAT
			**************************************			- Section 53
(2029)	2029	20	040	2050		2067
avian infectious bronchitis pol 1ab (1549)	LTEKWRO	IKSVM	DERSKOO	SETYKI.	PDTDENS	KAPWYYP
bovine coronavirus pol 1ab (1959)						
Human corona 229E pol 1ab (1746)	RLMKGDI	GDAED	PLTKLSI	KYLANEZ	OVOREHY	SSCVECD
Murine hepatitis pol 1ab (2004)	GDVVLAS	DDTXV	SRYSSEC	TTECKI	vvwight	EASTKST
Consensus (2029)						
						Section 54
(2068)	2068		2080	2090	1	2106
avian infectious bronchitis pol 1ab (1588)	VLDAIST	KATWV	EGNANES	VGHPN	(YS	
bovine coronavirus pol 1ab (1998)	TO HANK PA	TVDEN	KPDVTK	DDVADO	;G	IL 400 AUG. 1004 3000 4000 WAR 4004
Human corona 229E pol 1ab (1785)	AKEKNEV	ASDNS	ATVCAS	KRDGV	)VG	
Murine hepatitis pol 1ab (2043)	TYPNRPS	VVCEN	KENVLP	DVSEP	PDKGPVPZ	AVLVTGV
Murine hepatitis pol 1ab (2043) Consensus (2068)					PDKGPVPA	AVLVTGV

				- Section 55
(2107) avian infectious bronchitis pol 1ab (1615) bovine coronavirus pol 1ab (2024)	2107	2120	2130	2145
avian infectious bronchitis pol 1ab (1615)				KSLHI
bovine coronavirus pol 1ab (2024)			DI	SESDAKES
riulian culuna 229E doi 180 (1812)				32 VT カスエング
Murine hepatitis pol 1ab (2082)	PGADASAGAGI:	AKEQKACASAS	VEDQVVTEV.	RQEPSVSA
Consensus (2107)			DI	SVHA
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(2146) avian infectious bronchitis pol 1ab (1620)	2146	2160	2170	2184
avian intectious bronchitis pol 1ab (1620)	PTEWENAEMEN	KMGDKIGGVTM	GLWRAEHLN	KPNLERIF
povine coronavirus poi 1ab (2034)	KEINIIKUSGV	KKPFKVEDSVI	VNUDUSETE	ville of the
Human corona 229E pol 1ab (1817)	IKYYSRVRS	VRGRALIVSVE	QLEPCAQSR	GLSGVAYT
wurine nepatitis poi 1ab (2121)	ADVKEVKINGV	KKPVKVEGSVV	VNDPTSENK	VVKSTSTV
Consensus (2146)	DIKEIKLNGV	KKP KIEGSVI	VNDPTSESKI	LVKSLSIV
	CARDINATE A CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL O			<ul> <li>Section 57</li> </ul>
(2185)	2185 2190	2200	2210	2223
avian infectious bronchitis pol 1ab (1659)	NIAKKALVOSSY	VMTTQCGKTIG	KAAPFIADKI	VGGGVVRN
novine coronavirus por tab (2073)	DVYDMWLUGCR:	YVVRTANATSM	AVNVPTTRKI	PIT X POMPT.
Human corona 229E pol 1ab (1854)	AFSGPVDKGHY	PAYDTAKKSMY	DGDRFVKHDI	LSLLSVIS
Murine hepatitis pol 1ab (2160)	DALDMANINGK	yyywhanelsr.	LVNSBIVRE	YVKWGKGK
——————————————————————————————————————	DVYDMFLTGCK	YVV TANKLS		
(2224)	2224 2230	2240	2020	
avian infectious bronchitis pol 1ab (1698)		DC ACTU	2250	2262
bovine coronavirus pol 1ab (2112)	VerbandaLGI.	TEDUENCES		HFER
Human corona 229E pol 1ab (1893)	WWW.CCAMP BA	TULL A EMMANT	AKNETSACH	NETRATEA
Murine hepatitis pol 1ab (2199)	TATELARITA	gerocent broken	DDDNAOKERI	DEG DETTH
Consensus (2224)	IVIPIKLL LRI	) K E ALK : Women to the second	AN NA YOR	ANTWELL
	- CTTTION TIME	Y K E VER	VA AA ACE	Section 59
(2263)	2263 2270	2280	,2290	2204
avian infectious bronchitis pol 1ab (1716)	KMSPOFLKTEMI	FFEFEFET. KAS-	VKG	
bovine coronavirus pol 1ab (2151)	LIEGWIKISADI	IKVIYTTEVASI	KINCKTVATE	FKMASTO
Human corona 229E pol 1ab (1932)	NEVIETWI.TRN	ARTHORNE TO METER	COURTMANDAL	ODDERTITE
Murine hepatitis pol 1ab (2238)	YCESWIKENIDI	VKVIYTTEVAS	TERRICCI.	EKNATOT
Consensus (2263)	LF WIKFSLD	KVIYTTEVASI	KLT KI. T.Z	FKNALLT
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(2302)	2302 2310	2320	2330	2340
avian infectious bronchitis pol 1ab (1741)	VASYKTVLCKVÄ	LATIT TV EV	OTSNPXMETIC	TRAIL DET
bovine coronavirus pol 1ab (2190)	FKWSVVARGACI	CIATIPHIAPNI	PTVANVTEST	RYTERTC
Human corona 229E pol 1ab (1971)	KRSLKYNLKASA	AVLKSKWWLLI	AKETKLLLI	YTTYSVV
Murine hepatitis pol 1ab (2277)	ENWSVVSRGEFI	VATVELLXENI	TYANVITASI	RYLPNIC
Consensus (2302)	FKWSVVARGA 1	IATIFLLWENI	FIYANVILSE	FYLP IG

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(2341)	2341	2350	,2360	2379
avian infectious bronchitis pol 1ab (1780)	FEGSLCGP	YKDYG		KDSFDVLRYCA
bovine coronavirus pol 1ab (2229)	FLPTFVCK	TAQWIKST!	STVTTČDLY	SIQDVGFKNQYEN
numan corona 229E poi 1ab (2010)	L型CVRF總一-	PFN	CSETTINIC	VARCHETTERRANGE
interinte richanna hor ran (53.10)	PLPIFVEQ.	VAMEKTT	FGVSTICDFY(	OVIDLGYRSSECN
Consensus (2341)	FLPTFVG :	I W KSTI	F L TICD Y	IKDLGFK YCN
				Section 62
(2380)	2380	2390	2400	2418
avian infectious bronchitis pol 1ab (1804)	DDFIRV	HDKDS#HI	LYKHAYSTEQ	VYKDAASGFIFNW
bovine coronavirus por (ab (2268)	GISTAMOFER	TAGEDMEN	TVXXXTITUTION	TAD DAY DAY OF GAR
numan corona zzae poi 1ab (2041)	GSTGGKMG	REGNORES	TREATERISMEN	LEW CONTROL OF THE
wulling liebating bot (\$355)	GSMVSELT	SCFDMEDA	LYDATABATERALIC	TATE OF THE PROPERTY OF
Consensus (2380)	GSIICKLCI	CAGFDMLDN	YKHIDVVQH	VIDRRLS DY V
		The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s		Section 63
(2419)	2419	2430	2440	2457
avian infectious bronchitis pol 1ab (1843)	NMTATALPI	LFVKPVAG	<del></del> -F <b>以</b> 道-	ICYCVKYLVLN
DOVING COLONAVIRUS DOL TAD (2307)	HICKORY PRINTS	THE TANK TO ARETH THE	Title to the state of the second	A STATE OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PAR
Murino handitia and data (2080)	TAMARTETE	Marian and a second	·DNYE	RCFLLYFYAQMIS
Human corona 229E pol 1ab (2080) Murine hepatitis pol 1ab (2394)	EXTXAETA	GYSLIYTVC	EXPLEVITION	MOLITIMEPEREM
Consensus (2419)	TKTATETII	GYALYTA	FYPLF LII	CQILTTWLPELFM
(C)FO	A 4 P A			Section 64
(2458)	2458	2470	2480	2496
avian infectious bronchitis pol 1ab (1874)	SPVEOTGVC	TDDMEVOI	'VFSHFNFMGA	AGFYFWEFYKTYT
bovine coronavirus pol 1ab (2346)	Hat Dumak b	LLVSLANM	LPAHVFMRES	(IIIIAS FIKL FIL)
11UMAN CARANA 22UL MALIJAN (2107)				
1 dilian colona 2232 poi 1ap 12 1071	T W LAWYER LIGHT YOR	SHI'M MINITURE, LEW	'IPFDVICDEI	LVTVINIKVISF
Murine hepatitis pol 1ab (2433)	tvgvelgyk Letmiwsar	ETNWELHE LEVEVANM	IT PAFTIT DEV	TWITTMENTALLYCE
1 dilian colona 2232 poi 1ap 12 1071	tvgvelgyk Letmiwsar	ETNWELHE LEVEVANM	IT PAFTIT DEV	IVI ALIKVI L
Murine hepatitis pol 1ab (2433) Consensus (2458)	TVGWFLGYK DETMHWSAR LSTLHWSVR	ETNWELHE LEVEVANM LLVWFANM	LPASTLLRFY	IVVIAMYKVYCE IVI ALIKVI L ———— Section 65
Murine hepatitis pol 1ab (2433) Consensus (2458)	TVGWFLGYK DETMHWSAR LSTLHWSVR	ETNWELHE LEVEVANM LLVWFANM	LPASTLLRFY	IVVIAMYKVYCE IVI ALIKVI L ———— Section 65
Murine hepatitis pol 1ab (2433) Consensus (2458)  (2497) avian infectious bronchitis pol 1ab (1913)	TVGWFLGYS DETMHWSAR LSTLHWSVR 2497	LETNWELHE LEVEVANN LLVWFANM 2510	LPAFTLIRES LPAHVILREY  2520	IVVIAHYKVYCI VIVI ALIKVI L Section 65 2535
Murine hepatitis pol 1ab (2433) Consensus (2458)  (2497) avian infectious bronchitis pol 1ab (1913) bovine coronavirus pol 1ab (2385)	TVGWFLGYK DETMHWSAR LSTLHWSVR 2497 QVHHTLYCK FRYVANGS	ETNWELHE LEVEVANN LLVWFANN 2510 DVT/LEVICK	LPAFTLIRFY LPAHVILRFY  2520 RVAKSNISOEN	TVVTAMYKVYCI VIVI ALIKVI L Section 65 2535 SVV GGRKQIVH
Murine hepatitis pol 1ab (2433) Consensus (2458)  (2497) avian infectious bronchitis pol 1ab (1913) bovine coronavirus pol 1ab (2385) Human corona 229E pol 1ab (2146)	TVGWFLGYK LETMHWSAR LSTLHWSVR 2497 QVHHTLYKK FRHVAYGGS	ETNWELHE LEVEVANM LLVWFANM 2510 DVT/EVIKK KPG/LF-V	LPAFTLLRFY LPAHVILRFY  2520 RVAFSNIPOEN  TRNIBLEVKO	TVNTAMYKVYCI VIVI ALIKVI L Section 65 2535 SVV GGRKQIVH STINGOMTRYYD
Murine hepatitis pol 1ab (2433) Consensus (2458)  (2497) avian infectious bronchitis pol 1ab (1913) bovine coronavirus pol 1ab (2385) Human corona 229E pol 1ab (2146) Murine hepatitis pol 1ab (2472)	TVGWFLGYK DETMHWSAR LSTLHWSVR 2497 QVHHTLYCK FRHVAYGGS VRHVLFGEE CRHVMYGGS	ETNWELHF LFVEVANM LLVWFANM 2510 DVTCEVCK KPG LFCV NBD FACS	LPAFTLLRFY LPAHVILRFY  2520 RVAFSNEQEN  KRNESLEVKO KSAFLKEFPN  KRNESVEJKO	TVVTAMYKVYCE TVI ALIKVI L Section 65 2535 SVVLGGRKQIVH STILGGMTRYYD MTTVMGVQKSFY
Murine hepatitis pol 1ab (2433) Consensus (2458)  (2497) avian infectious bronchitis pol 1ab (1913) bovine coronavirus pol 1ab (2385) Human corona 229E pol 1ab (2146) Murine hepatitis pol 1ab (2472)	TVGWFLGYK DETMHWSAR LSTLHWSVR 2497 QVHHTLYCK FRHVAYGGS VRHVLFGEE CRHVMYGGS	ETNWELHF LFVEVANM LLVWFANM 2510 DVTCEVCK KPG LFCV NBD FACS	LPAFTLLRFY LPAHVILRFY  2520 RVAFSNEQEN  KRNESLEVKO KSAFLKEFPN  KRNESVEJKO	TVNTAMYKVYCE VIVI ALIKVI L Section 65  2535 SVV GGRKQIVH STIVGCMTRYYD MTIVNG VORSEY SEVVGGSLRYYD STIVGGMIRYYD
Murine hepatitis pol 1ab (2433) Consensus (2458)  (2497) avian infectious bronchitis pol 1ab (1913) bovine coronavirus pol 1ab (2385) Human corona 229E pol 1ab (2146) Murine hepatitis pol 1ab (2472) Consensus (2497)	TVGWFLGYK LETMHWSAR LSTLHWSVR 2497 QVHHELYCK FRHVAYGUS VRHVLFGUE CRHVMYGSS RHVIYGCS	ETNWELHE LEVEVANM LLVWFANM 2510 DVT/EV/K KPG/LF/Y NAD/LACS RPG/LF/Y KPG/LF/Y	LPAFTLLRFY LPAHVILRFY  2520 RVAKSNISOEN  KRNISLHVKO  KSARLKHIFPÖ  KRNISVKVKO  KRNRSLRVKV	TVNTAMYKVYCI VIVI ALIKVI L Section 65 2535 SVVLGERKQIVH STIVGENTRYED WITTING VQESFY STVVGESIRYYD 'STIVGGMIRYYD STIVGGMIRYYD STIVGGMIRYYD Section 66
Murine hepatitis pol 1ab (2433) Consensus (2458)  (2497) avian infectious bronchitis pol 1ab (1913) bovine coronavirus pol 1ab (2385) Human corona 229E pol 1ab (2146) Murine hepatitis pol 1ab (2472) Consensus (2497)	TVGWFLGYK DETMHWSAR LSTLHWSVR  2497 QVHHELYKK FRHVANGS VRHVLFGME CRHVMYGSS RHVIYGCS	ETNWELHF LFVEVANM LLVWFANM 2510 DVT EV K KPS LFGY NBD TAGS KPGCLFGY KPGCLFCY	LPAFTLLRFY  2520  RVARSNEQEN  KRNUSLRVKO  KSARLKEFPN  KRNUSVEVKO  KRNUSVEVKO  KRNUSVEVKO	TVNTAMYKVYCE VIVI ALIKVI L Section 65  2535 SVV GERKQIVH STIVGCMTRYYD NTIVNG VORSEY STV GESLRYYD STIVGGMIRYYD STIVGGMIRYYD STIVGGMIRYYD SECTION 66
Murine hepatitis pol 1ab (2433) Consensus (2458)  (2497) avian infectious bronchitis pol 1ab (1913) bovine coronavirus pol 1ab (2385) Human corona 229E pol 1ab (2146) Murine hepatitis pol 1ab (2472) Consensus (2497)  (2536) avian infectious bronchitis pol 1ab (1952)	TVGWFLGYK DETMHWSAR LSTLHWSVR  2497 QVHHELYKK FRHVAYGGS VRHVLFGGE CRHVMYGGS RHVIYGCS	ETNWELHE LEVEVANM LLVWFANM 2510 DVT EV K KPG LF Y NBD TACS KPGCLF Y KPGCLFCY	LPAFTLLRFY  2520  RVARSNEQEN  KRNISLBVKO  KSARLKEFPN  KRNISVRVKO  KRNRSLRVKV	TVVTAMYKVYCE VIVI ALIKVI L Section 65  2535 SVV GCRKQIVH STIVGCMTRYYD NTIVNG VQRSFY STVVGGSLRYYD STIVGGMIRYYD STIVGGMIRYYD SECTION 66  2574
Murine hepatitis pol 1ab (2433) Consensus (2458)  (2497) avian infectious bronchitis pol 1ab (1913) bovine coronavirus pol 1ab (2385) Human corona 229E pol 1ab (2472) Murine hepatitis pol 1ab (2472) Consensus (2497)  (2536) avian infectious bronchitis pol 1ab (1952) bovine coronavirus pol 1ab (2424)	TVGWFLGYK LETMHWSAR LSTLHWSVR  2497 QVHHTLYCK FRHVAYGUS VRHVLFGUS CRHVMYGSS RHVIYGCS 2536	ETNWELHE LETNWELHE LETNWELHE 2510  DVT EV K KPS LETY NED FACS KPG LETY KPGCLECY 2550 KRENWYC	LPAFTLLRFY LPAHVILRFY  2520 RVAKSNIPQEN KRNISLBYKO KSAKLKBFPN KRNESVNYKO KRNESVNYKO KRNESVNYKO KRNRSLRVKV  2560 RNCDDYGHQN	TVNTAMYKVYCE VIVI ALIKVI L Section 65  2535 SVV GGRKQIVH STILG MTRYYD MTTYMG VQRSEY SEV GGSLRYYD STIVGGMIRYYD STIVGGMIRYYD Section 66  2574
Murine hepatitis pol 1ab (2433) Consensus (2458)  (2497) avian infectious bronchitis pol 1ab (1913) bovine coronavirus pol 1ab (2385) Human corona 229E pol 1ab (2472) Consensus (2497)  (2536) avian infectious bronchitis pol 1ab (1952) bovine coronavirus pol 1ab (2424) Human corona 229E pol 1ab (2185)	TVGWFLGYK LETMHWSAR LSTLHWSVR  2497 QVHHTLYCK FRHVAYGGS VRHVLFGSS RHVLYGCS RHVLYGCS WYTMSGYNF	ETNWELHE LETWEVANM LLVWFANM  2510  DVT/EV/K KPS/LF/Y NAD/LACS RPS/LF/Y RPS/LF/Y 2550  KRENWYC CKKERFF/	LPAFTLLRFY LPAHVILRFY  2520 RVAKSNIS QEN KRNIS LHVKO KSAHLKHIF PV KRNIS VINVKO KRNIS VINVKO KRNIS VINVKO KRNIS LRVKV  2560 RNC DDYGHON I DD SYKPGN	TVNTAMYKVYCE VIVI ALIKVI L Section 65  2535 SVV GGRKQIVH STIVGCMTRYLD NTIVNG VORSEY SEVV GGSLRYYD STIVGGMIRYYD STIVGGMIRYYD STIVGGMIRYYD Section 66  2574 FMSPEVAGETIS
Murine hepatitis pol 1ab (2433) Consensus (2458)  (2497) avian infectious bronchitis pol 1ab (1913) bovine coronavirus pol 1ab (2385) Human corona 229E pol 1ab (2472) Consensus (2497)  (2536) avian infectious bronchitis pol 1ab (1952) bovine coronavirus pol 1ab (2424) Human corona 229E pol 1ab (2185) Murine hepatitis pol 1ab (2185)	TVGWFLGYK LETMHWSAR LSTLHWSVR 2497 QVHHTLYKK FRHVAYGGS VRHVLFGEE CRHVMYGES RHVIYGCS 2536 VYTMSGYNE VMANGGTGF	ETNWELHELFEVENAM  LLVWFANM  2510  DVTOEVICK  KPGLIFOY  NEDCLIFOY  KPGCLFCY  2550  KRENWYC  CKKHREFO	LPAFTLLRFY LPAHVILRFY  2520 RVAFSNIPQEN  KRNIPSLHVKO  KSAFLKHIFP  KRNISVRVKO  KRNRSLRVKV  2560  RNCDDYGHQN  IDCDSYKPGN  VDCDSYGYGS  LNCNSWKPGN	TVNTAMYKVYCE VIVI ALIKVI L Section 65  2535 SVV GGRKQIVH STIVGCMTRYLD NTIVNG VORSEY SEVV GGSLRYYD STIVGGMIRYYD STIVGGMIRYYD STIVGGMIRYYD Section 66  2574 FMSPEVAGETIS

					Section 67
(2575)	2575	2580	2590	2600	261
avian infectious bronchitis pol 1ab (1991)	EKTR	RHMKFIA	YWYHVVDE	CLVDDEVN	KYKAATPGKI
bovine coronavirus pol 1ab (2463)	KELKI	RPIQLED	VECTUTIVED	KÖVGCYMRK	YERDGORT
Human corona 229E pol 1ab (2224)	NITE	TNVOFEG	PARVMITORX	KERRIGEYRE	<b>VSCETEMBY</b>
Murine hepatitis pol 1ab (2550)	KELM	RPVNEED	SMYYSVEET	KOVGCSMRL	YERDGORV
Consensus (2575)	KELKI	RPVQPTD	AYHTVTE	/KQVGCFMRL	FYERDGQR
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(2614)	2614	2620	2630	2640	265
avian infectious bronchitis pol 1ab (2030)	SASS	AVKCFSV	TDFTKKAVI	LKEALKCEO	ÎSA KETIVCI
bovine coronavirus pol 1ab (2502)	DDVNI	ASLEVDY	SNELHSKVI	GVPNMHVVV	/E : D
Human corona 229E pol 1ab (2263)	FDITE	ESKYSCK	EVFKNC	NVLDDETVE	1NKG
Murine hepatitis pol 1ab (2589)	DDVN	ASLEVDM	NGLLHSKVI	GVESTHUVV	7E//B
Consensus (2614)	DDVN	ASLEVDM	S LLHSKVE	GVPDLHVVV	ZEND
				Michigan III	Section 69
(2653)	2653	2660	2670	2680	269
avian infectious bronchitis pol 1ab (2069)	TQSAI	HALEEAK	NWAIYYACY	/#CKPILITE	ATYEQLVV)
bovine coronavirus pol 1ab (2535)	<del>-</del>	ADKANFL	NHAVEYADS	SEFREELMVDI	TATTIUM
Human corona 229E poi 1ab (2293)		PNVTOVK	NASVYESDI	I CRITKIVO	FINISTES
Murine hepatitis pol 1ab (2622)		ADKAGEL	GHAVEYA''S	YRPMLMVE	KHTTTANTO
Consensus (2653)	7	ADKANFL	NAAVFYAQS	SLCRPILMVDI	LITTLNV
	<b></b>				—— Section 70
(2692)		2700	27		20 273
avian infectious bronchitis pol 1ab (2108)	PVS-	KSVIDKV	CSIMSSMIS	NUTAATN	ME SOME STATE SAME SHAME AND SHAME SAME SAME SA
bovine coronavirus pol 1ab (2570)	TSVI	CIMEDAX.	VDTFLSMEI	WEKKSLNAL	ATAHSSIK
Human corona 229E pol 1ab (2328)	FNG	-VIHKAX	IDVIRNSEG	KILN	AN
Murine hepatitis pol 1ab (2657)	LSVSI	RIMEDIX	V D S T I I I V L D	overksetset	ZNAAHNSLKI
Consensus (2692)	SVSE	KTMFDLY	VDTLLSIFE	OVDKKŠLNA I	
			***************************************		—— Section 71
(2731)	2731	274	0 2	750	276
avian infectious bronchitis pol 1ab (2134)	terra		YKAGTLRDA	LLSITKDEE!	AVDMATECH
bovine coronavirus pol 1ab (2609)	GTQIC	CKYDDTF	LSCARKSCS	JIDSDVDIKCI	ADSVMSAY:
Human corona 229E pol 1ab (2352)	TOTAL LANGUAGE		MSLAECKRA	HIGLSILS DHEE	TSAISNAHI
Murine hepatitis pol 1ab (2696)	GVQLE				
Consensus (2731)	G QI	VLDTF:	ISCARKKCA	IDSDVDTKE	
					Section 72
(2770)	2//0	27	'80 ///	2790	280
		CONTRACTOR OF STREET	80 スプロンの3 <b>で</b> を収拾されてい	S PTD 271 (2007) 2001 2001 2001 2001 2001 2001 2001 200	management of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the con
avian infectious bronchitis pol 1ab (2162)	HDVD:		NATEOGET	TORUTERSE	FURNALITY
bovine coronavirus pol 1ab (2648)	AGLE	CODESCNO	HLVETYEKG	-DNIVAADLO	VLIONSAKI
bovine coronavirus pol 1ab (2648) Human corona 229E pol 1ab (2380)	CDVL	CIDESCNO LSDLSEN	nlvetyeko Frissake	-DNIVAADLO EEKLSAYUL7	VLIONSÆKI ACCMRAGEKA
bovine coronavirus pol 1ab (2648) Human corona 229E pol 1ab (2380) Murine hepatitis pol 1ab (2735)	AGLEI CDVLI AGVDI	CTDESCN LSDLSEN FTDESCN	VLVETYLKO PEVSSYAKE ILVETYVKS	- DNIVAADLO PEKLSAYUL7 3 - DTIVAADLO	VLIONSAKI CCMRAGAK VLIONNEKI
bovine coronavirus pol 1ab (2648) Human corona 229E pol 1ab (2380)	AGLEI CDVLI AGVDI	CTDESCN LSDLSEN FTDESCN	VLVETYLKO PEVSSYAKE ILVETYVKS	- DNIVAADLO PEKLSAYUL7 3 - DTIVAADLO	VLIONSAKI CCMRAGAK VLIONNEKI

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(2809)	2809	2820	2830	2847
avian infectious bronchitis pol 1ab (2201)	ANLESKNEP-	- 海ASS X E S E T ]	KIEDSCLKYI	ISATVKS
bovine coronavirus pol 1ab (2686)	VQGNJAKIAG	VSCTWSVDAFI	(QL:SDFQHKL	KKACCKTU
Human corona 229E pol 1ab (2419)				
Murine hepatitis pol 1ab (2773)	VQAN YAKAAN	Vaciusydäei	QISADLQHRL	RKACSKT
Consensus (2809)	VNANVAKAAN	VPCIWSVDAF	QLSAD QKYL	RKAC KTG
			· · · · · · · · · · · · · · · · · · ·	Section 74
(2848)		2860	2870	2886
avian infectious bronchitis pol 1ab (2238)				
bovine coronavirus pol 1ab (2725)	TKTKTIANKÖ	MANVSVLTI	PESLKGJAVE	\$
Human corona 229E pol 1ab (2458)	ETELLIENEN	QAMTQIPATS:	IVAKQGAL DAG	Ĥ
Murine hepatitis pol 1ab (2812)	IKIKITYNKO	EANVERLT	PPSIKGEAVE	<u>s</u>
Consensus (2848)	LKFKLTYNKQ	VANVPILTT	PPSLKAGAVE	S
The second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon				Section 75
(2887)	2887	2900	,2910	2925
avian infectious bronchitis pol 1ab (2277)				
bovine coronavirus pol 1ab (2755)	YEVY	VCFTLSTVCE	CGLWCLMPTYT	VHKSDFQL
Human corona 229E pol 1ab (2490)	SLIN	DWLLCGLYCL	COFYLCFFMPY	FMYDIVSS
Murine hepatitis pol 1ab (2842)	RMLQ	WEFVANLECE:	CVLWALMPTYA	VHKSDMQL
Consensus (2887)	ILY	ILFLA LVCF	I LWLLMPTYH	VMYSDMSL
				Section 76
(2926)	2926	2940	2950	2964
avian infectious bronchitis pol 1ab (2316)	LHVEGFEVED	KCVLREIVPE	TOFSHKEVNE	DAEWGRPY
bovine coronavirus pol 1ab (2788)				
Human corona 229E pol 1ab (2523)				
Murine hepatitis pol 1ab (2875)				
Consensus (2926)	PLYASFKVID	NGVLRDVSVE	CFANKFENF	
which has an disconnection of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the co		And the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s		Section 77
(2965)	2965 2970	2980	2990	3003
avian infectious bronchitis pol 1ab (2355)	DNSRNCPIVT	AVIDGDGTVA	CGVPGFVSWVM	DGVMFIHM
bovine coronavirus pol 1ab (2827)	GUSYYSNSMA	CPINVA	VVDQDDGSTVF	NVPTKVLR
Human corona 229E pol 1ab (2562)				
Murine hepatitis pol 1ab (2914)				
Consensus (2965)	GLSYY NSMA	CPIVVA	VGVQDIVSTVF	
District the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second sec		The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s		- Section 78
(3004)	3004 3010	3020	3030	3042
avian infectious bronchitis pol 1ab (2394)	TOTERKPWYI	PTWFNREIVG	YWQDSITTEGS	FYTSIALF
bovine coronavirus pol 1ab (2862)	XGYHVLHFTT	HALSADGVQC	YTPHSOISYSN	FYASGCVL
Human corona 229E pol 1ab (2594)	VGKTLIFTLQ	AAFGNAGVCY	DIFGVTTPEK-	CIF
Murine hepatitis pol 1ab (2949)				
Consensus (3004)	YGFHVLHFIT	HAFANDGVQC	YTPHSQIPY N	FYASGCVL

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(3043)	3043 ,3	3050	3060	3070	3081
avian infectious bronchitis pol 1ab (2433)	SARCLYL	PASNTPQL'	YCFNGDNDAI	PGALPEG	TIPHRV
bovine coronavirus not 1ab (2901)	SCACTMENT	MADGSPO	PYCYTECTM	NASTAGE	TUDUTE
Human corona 229E pol 1ab (2627)	TSASTRU	eglegn-N	VÝCYNTALMI	GSLPYSS	IQANAY
Human corona 229E pol 1ab (2627) Murine hepatitis pol 1ab (2988)	SSLCIML	THADGTPH	PYCYTIGGYMI	INASLYSS	LAPHVRY
Consensus (3043)	SSACTML	AAADGSPN	PYCYTDGLM	NASPYSS	IIPHVRY
			w/A		Section 80
(3082) avian infectious bronchitis pol 1ab (2472)	3082	3090	3100	3110	3120
avian infectious bronchitis pol 1ab (2472)	FQPNG	VRLIVPQQ	ILHTPYVKI	vs.dsycu	GSWERYT
bovine coronavirus por 1ab (2940)	NLANALGI	LINDERATI	REGLARIAR	PRSMSYCK	VGLCBEA
Human corona 229E pol 1ab (2665)	KYDNGNF	IKLPEVIA	QGFGFRTR	LATKEL	VGETVES
Murine hepatitis pol 1ab (3027)	NLASSNG	YIR FEEVV.	SEGIVRVAR	RSMT	VGUGEEN
Consensus (3082)	NLANGNG	VIRFPEVL	EGIVRVVR	RSMSYCE	VGLCEEA
					Section 81
(3121)	3121	3130	3140		3159
avlan infectious bronchitis pol 1ab (2509)	RPEYEVSI	LMPQWXLF	ndeytske <b>c</b> i	FEGSTVR	ELMFSMV
bovine coronavirus pol 1ab (2979)	DESICENT	ENGSW LN	ndtyrsbeg!	EXCEPDIVE	DHIYQLF
Human corona 229E pol 1ab (2704)	NAGVCEGI	CDKWEÇND(	GRVANE	(VOGTGLW	NUVENIL
Murine hepatitis pol 1ab (3066)					
Consensus (3121)	DEGICENI	FNKSWVLNI	NDYYRSLPG		
The second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				Section 82
(3160)	3160	,3170	3180	e N. 1990a). Na erire lert anny 1 dans, propositional and 14 authoristics.	3198
avian infectious bronchitis pol 1ab (2548)	STFFIGN	PN-TYMQ:	LATMFLILM	/VVLT-FAM	IVE POGV
bovine coronavirus pol 1ab (3018)	KGLAOPYJ	PELALTAS	SIAGALHAV	LVVLVEYY	LIKUKRA
Human corona 229E pol 1ab (2740)	SMFSSSF:	SVAAMSGO.	ILLNCALGA	ALFCCEL	VTKFRRM
Murine hepatitis pol 1ab (3105)	GGLVREIN	DFFALTAS.	SVAGATLAT	CAMPARAN	LIKLKRA
Consensus (3160)	SGLASPVI	DF ALTAS:	SIAGAILAVI		
			A CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR		Section 83
(3199)					3237
		3210	3220	t god have for the second select make the applications for the	
avian infectious bronchitis pol 1ab (2586)	KAYATT	JET TMLVW	VINAFILO		VILLVLY
avian infectious bronchitis pol 1ab (2586) bovine coronavirus pol 1ab (3057)	KAYATT GDYTSI	FTTMEVW	VIVAFILC® CVWFMMLEN	COVYPILS	VILLVIY CVYAICY
avian infectious bronchitis pol 1ab (2586) bovine coronavirus pol 1ab (3057) Human corona 229E pol 1ab (2779)	KAYATT GDYTSI GDLSVG	/FITMEVW /EVNVIVW /CTVVVAV	VINAFILCVI EVNEMMLEVI LLNNVSYIN	OVYPILS CONLVEMI	VILLVIY CVYAICY AYAILYE
avian infectious bronchitis pol 1ab (2586) bovine coronavirus pol 1ab (3057) Human corona 229E pol 1ab (2779) Murine hepatitis pol 1ab (3144)	KAYATT GDYTST GDLSVG GDYTSV	FITMEVM PVNVIVM CTVXVAV PVENVIVM	VIVAFILC CVAFMMLEVA LLNNVSYIA SIVELMIEN	OVYPTLS CONLVIMI OVYPTLS	VÍLLVLÝ CVÝAICÝ AYAILÝE CTÝACEÝ
avian infectious bronchitis pol 1ab (2586) bovine coronavirus pol 1ab (3057) Human corona 229E pol 1ab (2779)	KAYATT GDYTST GDLSVG GDYTSV	FITMEVM PVNVIVM CTVXVAV PVENVIVM	VIVAFILC CVAFMMLEVA LLNNVSYIA SIVELMIEN	OVYPTLS CONLVYMI COVYPTLS COVYPTLS	VELLYLY CVYAICY AYAILYE CTYACEY CIYAIFY
avian infectious bronchitis pol 1ab (2586) bovine coronavirus pol 1ab (3057) Human corona 229E pol 1ab (2779) Murine hepatitis pol 1ab (3144) Consensus (3199)	KAYATT GDYTSE GDLSVG GDYTSV FGDYTSI	FTTMLVW FVNVLVW CTVVVAV VLNVLVW VFINVLVW	VINAFILCE EVMEMMLEVI LLNNVSYIN EINELMLEVI CINFLMLEVI	OVYPTLS OVYPTLS OVYPTLS	VILLVI.Y CVYAICY AYAILYE CLYACFY CIYAIFY Section 84
avian infectious bronchitis pol 1ab (2586) bovine coronavirus pol 1ab (3057) Human corona 229E pol 1ab (2779) Murine hepatitis pol 1ab (3144) Consensus (3199)	KAYATT GDYTSE GDLSVG GDYTSV FGDYTSIV	FITMLW FYNVIVN CTVVVAV VINVLVW VFINVIVW 3250	VINAFILC (FI EVMEMMLE VI LLNNYSYI) EINELMIEVI CINFLMLEVI 326	OAABITE OAABITE OAABITE OAABITE	VILLVIY CVYAICY AYAILYE CLYACEY CIYAIFY Section 84 3276
avian infectious bronchitis pol 1ab (2586) bovine coronavirus pol 1ab (3057) Human corona 229E pol 1ab (2779) Murine hepatitis pol 1ab (3144) Consensus (3199)  (3238) avian infectious bronchitis pol 1ab (2625)	EKAYATT GDYTSI GDLSVG EGDYTSV FGDYTSIV 3238 CYASEVTS	FTTMLVW FVNVIVW CTVVVAV VIVVLVW VFINVIVW 3250 SRNTVLIW	VINAFILC (FOR COMPANY STATEMENT) CINFLMLENT 3261 HCWLVFTFG	OVYPILS ONLYPILS OVYPILS OVYPILS O OVYPILS	VILLVI.Y CVYAICY AYAILYE CLYACFY CIYAIFY Section 84 3276
avian infectious bronchitis pol 1ab (2586) bovine coronavirus pol 1ab (3057) Human corona 229E pol 1ab (2779) Murine hepatitis pol 1ab (3144) Consensus (3199)  (3238) avian infectious bronchitis pol 1ab (2625) bovine coronavirus pol 1ab (3096)	GDYTSI GDYTSI GDLSVG GDYTSV FGDYTSIV 3238 CYASLVTS FYATLYFI	FITMLW FYNVIVM CTVVVAV CTVVVAV VINVLVM S250 RNTVIM	VINAFILCE EVERMMENT LENNVSYIT ETELMIE CINFLMLFVI  326 HCWLVFTFGI	OVYPILS ONLYPILS OVYPILS OVYPILS O IVPIWLA IMPEWEO	VILLVIY CVYAICY AYAILYE CLYACFY CIYAIFY Section 84 3276 CCFLGFT
avian infectious bronchitis pol 1ab (2586) bovine coronavirus pol 1ab (3057) Human corona 229E pol 1ab (2779) Murine hepatitis pol 1ab (3144) Consensus (3199)  (3238) avian infectious bronchitis pol 1ab (2625) bovine coronavirus pol 1ab (3096) Human corona 229E pol 1ab (2818)	GDYTSU GDYTSU GDLSVG GDYTSV FGDYTSIV 3238 CYASLVTS FYATLYFI FATRSLR-	FITMLW FVNVIVW VEVNVLVW VENVLVW 3250 SRNTVLM FSELSVIW	VINAFILCE EVERMMENT LINNVSYIT STOFFMENT CINFLMLFVI  326 HCWLVFTFGI HLOWLVMYG	COVETLS COVYPTLS COVYPTLS TVPTLLS TVPTLLS	VILLVI.Y CVYAICY AYAILYE CLYACEY CIYAIFY Section 84 3276 CC +LGFI LL tISVV
avian infectious bronchitis pol 1ab (2586) bovine coronavirus pol 1ab (3057) Human corona 229E pol 1ab (2779) Murine hepatitis pol 1ab (3144) Consensus (3199)  (3238) avian infectious bronchitis pol 1ab (2625) bovine coronavirus pol 1ab (3096)	KAYATT GDYTST GDLSVG GDLSVG GDYTSV FGDYTSI  3238 CYASLVT FYATLYFI FATRSLR-	JETTMLVW JEVNVIVW JEVNVLVW JENVLVW JENVLVW 3250 SRNTVLIM FELSVIWYA-WIW SELSVIW	VINAFILCE EVERMMENT LENNVSYIT SIDELMLE CINFLMLEV  3260 HCWLVFTEGI HLOWLVMYG CAAYLLAYI HLOWLVMYG	OVYPILS FONLVEMI OVYPILS FOVYPILS  LIVEIN LA LIVEIN LA LIMPLWFC LIMPLWFC	VILLVIY CVYAICY AYAILYE CIYACFY CIYAIFY Section 84 3276 CCFLGFF LIFTSVV AWAFLAM

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(3277)	3277	32:	90	3300	3315
(3277) avian infectious bronchitis pol 1ab (2664)	TYMYTPL	FLWCYGTI	KNTRKLY	DGNEFVINY	LAAKSTÉ
bovine coronavirus pol 1ab (3135)	MS	-NHAFWVE	AYCRREG	TSWRSDOTE	EMATHE
Human corona 229E pol 1ab (2854)	LTGL	-LPSLLKI	KVSTNIF	FGDKFW	SAMAGE
Murine hepatitis pol 1ab (3222)	VS	-NHALWLE	SYCRKIC	TEVRSDGRE	EMEDIT
Consensus (3277)	VS	NHALWLE	KYCRKLG	TGVRSVGTF	CEMALTTF
					- Section 86
(3316) avian infectious bronchitis pol 1ab (2703) bovine coronavirus pol 1ab (3168)	3316	3	330	3340	3354
avian infectious bronchitis pol 1ab (2703)	VRGSEF	VHET REDIC	-DKEEAT	LSAZARLK	CSCTGSEQ
bovine coronavirus pol 1ab (3168)	MITKDŠY	žalki stš	DVATNR	LSINKYRL	ZSCKMDTA
Human corona 229E poi 1ab (2889)	WIDMRSY	ENLANSIS	PEKLKSE	AASYNRYK	CHRINANEA
Murine hepatitis pol 1ab (3255)	MITKESY	CMTKMS VE	DVAFUR	LSLYNKYRYI	CSCKMDTA
Consensus (3316)	MITKDSY	CKLKNSIS	DVKFNRY	LSLYNKYKY	SGKMDTA
A SUM AND AND AND AND AND AND AND AND AND AND					- Section 87
(3355)	3355 336	0	3370	3380	3393
avian infectious bronchitis pol 1ab (2741)	DALONCRI	AWIYIL	QYR-NSG	VETVITAFRY	CET GVERE
bovine coronavirus pol 1ab (3207)	ATREMAC:	SQUAKAMI	TETNING	SDVLAQPETY	SVSTSEL
Human corona 229E poi 1ab (2928)	DERCACY	AYLAKAMI	DESROHN	-DILYTHET	/SYG-STL
Murine hepatitis pol 1ab (3294)	AFREAAC.	SQLAKAME	TENHNNG	NDVLYQPFTZ	(SV.TIPSET
Consensus (3355)	DYREACC	AQLAKAMD	OTES NNG	DILYTPPT	
All Administration of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of	· · · · · · · · · · · · · · · · · · ·				- Section 88
(3394)	<u>3394 34</u>	00	3410	3420	3432
avian infectious bronchitis pol 1ab (2779)	OSGEKKE	VS#SSA™	KEIVSVS	RGNNINGTO	REGUTAYO
bovine coronavirus pol 1ab (3246)	USGIVIM	VNRTSKE	'PGIRSVT	TGNMTC11911	₽ij <b>D</b> ₽KΥ₩⊀₩
Human corona 229E pol 1ab (2965)	DAGLRIM	AQ#SGF#	KGVYRYC	IGNT VENGER	LUG WINE
Murine hepatitis pol 1ab (3333)	OSGIVEM	VSTTSKUE	PFIMSMI	Y GNMTLERG H	UEDBKV, D
Consensus (3394)	QSGIVKMY	VSPSSKVE	PCIVSVT		
	_ 3 _ 2				- Section 89
(3433)		3440	3450	3460	3471
avian infectious bronchitis pol 1ab (2818)	PRIMICKI	FSGDQWN	VLNLANN	HEFEVTEQUE	3——文工部的别
bovine coronavirus pol 1ab (3285)	PHYICS!	ASDMENDI	XTNLLCR	VTSSDETVIE	PORLSLIN
Human corona 229E pol 1ab (3004)	EKHYTASI	W-TTSAI	YDHEYSI	MRLHNESTIS	GTAFMGV
Murine hepatitis pol 1ab (3372)	RKUN I GS	SADMIDPL	YPNLLCR	VISSDECVMS	GRMSLTY
Consensus (3433)	PRHVICS2	ASDMT PD	Y NTPCE	VISSDFTVIS	
200 200 000		2400			- Section 90
(3472)	34/2	3480	3490	3500	3510
avian infectious bronchitis pol 1ab (2855)	VOKKUK SA	AVELLOTA	VAHAEUE	KYKEIKANC	DSFITAC
bovine coronavirus pol 1ab (3324)	MAXAWAE	WAYLIVI	LONSRI	KALEGAAKE	ETETVLA
Human corona 229E pol 1ab (3042)	ACALMHO!	V TEKLKIVS	QTAMHIL	RHSTRTLKS	EGENILA
Murine hepatitis pol 1ab (3411)					
Consensus (3472)	M2 X QMQG(	TMTATLAL	LQNA TP	KYSFGVVKPG	SETFTILA

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(35	511)	3511	3520	,3530		3549
avian infectious bronchitis pol 1ab (28	394)	ASGITVVGI	YPVTMRSN	IGULRASII.	UAMAÇO,	VSFNIEKG
bovine coronavirus pol 1ab (33						
Human corona 229E pol 1ab (30	081)	CEDECAGG	I GUNMET N	WITRGST	INCACA	PUYNLKNG
Murine hepatitis pol 1ab (34	450)	ATMERPOOF	FHTTLESS	HITKGOS	LC 5 1 G	VYVLTGD
Consensus (35	511)	AYNGKPQGA	FHVTMRSS	SWTIKGSF:	LCGACGS	
A Landau Strawall Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color Color	Th. 17 at 1 at 1 at 1 at 1 at 1 at 1 at 1 a					— Section 92
(35	550)	3550	3560	3570		3588
avian infectious bronchitis pol 1ab (29	933)	VVI FAMILE	LIPNALF	TGTDLME	E E E G G Y Y	JEENAGRY
bovine coronavirus poi 1ab (34	402)	CAKEVYMHO	DELISTICH	TO PERMIT	DEMMPY	CIAOVVOITOP
Human corona 229E pol 1ab (31	120)	ENERVINE	)IEEGSGSH	IVGS SEDS	VMEGGE	COPNLOVE
Murine hepatitis pol 1ab (34	489)	SERWVILLE	ilt sagci	TOTOESG	MENCHAI	RI-AQVVQLP
Consensus (35	550)	VKFVYMHÇ	LELSTGCH	ITGTDF G	DFYGPYI	
		W. W. Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Common Com				Section 93
(35	589)	3589	3600	3610	or	3627
avian infectious bronchitis pol 1ab (29	972)	PPDNLVINE	OP SAWASSAA	IISVKES:	SFSLPK	<b>LESTTVSV</b>
bovine coronavirus pol 1ab (34	441)	VQDYIQSV	FigWilas	ILWN	cinmi	rvospkcsv
bovine coronavirus pol 1ab (34 Human corona 229E pol 1ab (31 Murine hepatitis pol 1ab (35	159)	SANOMLTV	·文字的EJ·库鲁	TING	CTWI	VIKGEKLEV
iviurine nepatitis poi 1ab (35	528)	VODYTOTV	Yanasay haliasa	RIFMR	CNW	IVQSDSCSL
Consensus (30	(שטט	VQDYIQTVN	IVVAWLYAA	LLIN	CNWI	FLOSDKCSV
200	2001	2000	2010	005	^	- Section 94
ائة) avian infectious bronchitis pol 1ab (30	020)	3628	3640	365	<u> </u>	3666
avian injectious pronchitis poi 1ab (30	JT1)	DEYNKMAGL	Maria Pris I	STAUTK	SALPISVI	JVCKL RT
bovine coronavirus pol 1ab (34	4001	THE PARTY OF THE	eavye nem	PLYTUAL	ASMUG.,	SLEET LEAAR
Human corona 229E pol 1ab (31 Murine hepatitis pol 1ab (35	192)	Entracta V	VPIAL TAMNU	DATES LE	AK	YEKUUHAL
Concensus (36	2017	EDFNVWALS	NCECATER	VULL AT THE TARE		LAMONIAAI
Consensus (30	J20)	BDENVWALE	MGESHIKE	ODVATORE	AAMTGV	— Section 95
(36	367)	3667	,3680	36	90	3705
avian infectious bronchitis pol 1ab (30	050)	MWKNSOWG	DPGNGOYN			
bovine coronavirus pol 1ab (35	513)	KRIKUGROU	ROTMUSES	FRONTA	snivoli	action a
Human corona 229E pol 1ab (32						
Murine hepatitis pol 1ab (36	600)	KRLHSGFO	KOLEGSEV	ZE OST TE	Savyoon	Acvkilik
Consensus (36	667)	KVLNSGFQC	KOILGSCS	LEDELTP	SDVYOOI	LAGVKLOSK
					~~~	- Section 96
(37	706)	3706	3720	) ;	3730	3744
avian infectious bronchitis pol 1ab (30	(880	- DEWKINA TE	- WE WORLV	LA LILLE V	ほしひょくひょ	TAVELINEI
bovine coronavirus pol 1ab (35 Human corona 229E pol 1ab (32	552) 269)	RTRLVKGIV -GKTTSMFF	CWIMASTE CSISLFAGE	LESCIIT. FVMEWAE	AFVKWTI LEVYTIV	YFMYVTTNM CIWVNPGFL
bovine coronavirus pol 1ab (35 Human corona 229E pol 1ab (32 Murine hepatitis pol 1ab (36	552) 269) 639)	RTRLVKGIV -GKTTSMFF	/CWIMASTE SISLFAGE CWILASTE	LESCIIT FVMEWAE LEGSIIS	AFVKWT) LFVYTI AFVKWT)	YEMYVTTNM CIWVNPGFL YEMYVTTHM

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(3745)	3745 37		3760	3770	3783
avian infectious bronchitis pol 1ab (3125)	VYAAVII	EMANLEIS	FTV: VMI	AYMDTFLLPT	TITYIIG
bovine coronavirus pol 1ab (3591)	ISITECA	LICVISLAN	ILLV2 HKHI	SYLTMYITEX	ZIFTLLYÑ
Human corona 229E pol 1ab (3307)	TPEMILI	VALSLCLI	PVVKLKV	FLQVFLITE	SILVAAIQ
Murine hepatitis pol 1ab (3678)	ĪGVŢĪĆĀ	LCEVSEAR	LLLLSEKHI	YLÍMYIMEY	LCTIFYT
Consensus (3745)	L ITICI	LCLVSFAN	ILLVKHKHI	LYLTMFILPY	/LITLIYN
			*		<ul> <li>Section 98</li> </ul>
(3784)	3784 3	790	3800	,3810	3822
avian infectious bronchitis pol 1ab (3164)	VCAEVPE	TIYNTLISC	VVIFLSQV	VYDPVVEDTI	AV.PWMELP
bovine coronavirus pol 1ab (3630)	NATAAAR	OTERGYVY	AWLSYYV	SVEYTYTDI	EVIYGMLL
Human corona 229E pol 1ab (3346)	NCAWDY	VIKVEAER	CFDYNVSVI	40MDIOGEVE	IFICHFV.
Murine hepatitis pol 1ab (3717)	NAPANAW	QSERGLAY	AWLSHFV	PAVDYEYMDE	VIYGVVL
Consensus (3784)	NATAAAk	COTFRLIAY	AWLSVSVI	PAVDYTY DE	EVIYGLLL
A STATE OF THE STA		ALTO ALTO ALTO ALTO ALTO ALTO ALTO ALTO			<ul> <li>Section 99</li> </ul>
(3823)	3823	3830	3840	,3850	3861
avian infectious bronchitis pol 1ab (3203)	LVLYTAE	KCVQGCŸM	INSFNTSLI	LMLYQFVKLC	SFVIYTSS
bovine coronavirus pol 1ab (3669)	LIGMVFV	TERSINHI		LFSFIMEN	/GRVISVV
Human corona 229E pol 1ab (3385)	ALLHTWE	FAKER		CTHWC	CTYLFSLI
Murine hepatitis pol 1ab (3756)	LVAMVEY	TMRSINHE	) <del></del>		
Consensus (3823)	LVLMVFV	TLRSINHE	)	LFSFI LV	
A COLOR CONTROL OF THE COLOR OF		1 2.3.000.000.000			Section 100
(3862) avian infectious bronchitis pol 1ab (3242)	3862	3870	3880	3890	3900
avian infectious bronchitis pol 1ab (3242)	NTLTAY	EGNWETE	ELYHTTVI	JANVSSNSL	GLFVFKC
bovine coronavirus pol 1ab (3699)					
Human corona 229E pol 1ab (3409)	AVLYTAI	, y s y d y y s i	LVMLLCAT	ISNEWYIGA	IFRICRE
Murine hepatitis pol 1ab (3786)	SMWYFGA	MYDEERATI	furstre:	CYTWIIMISI	PATAKVIA
Consensus (3862)	SLWY GS	NPEEEAPI	LLMSLFG		
		A CONTROL OF THE PARTY OF THE P		***************************************	Section 101
(3901)		3910	3920	***************************************	3939
avian infectious bronchitis pol 1ab (3281)	AKWMLYY	CNATAINN	YVLMAVM	/NCIGWLCT(	COEGLYWW
bovine coronavirus pol 1ab (3738)	KWYAVNV	LYFTDIPC	DIKIVLYC	CUFFCERIS	TWOLFSL
Human corona 229E pol 1ab (3448)	GVAFDPN	EXVSYFDO	KTVLLF;	em Lige VSCN	MYCLLOY
Murine hepatitis pol 1ab (3825)					
Consensus (3901)	KWLALNV	LYFTYIPÇ	JIKTATT 3		
		A			Section 102
(3940)	3940	,3950	3960	Daniel De la Company de la Com	3978
avian infectious bronchitis pol 1ab (3320)	VNKNFGI	TLEKINE	CVSVDQYR	MCLHKINE	KTVWEVE
bovine coronavirus pol 1ab (3777)	MUSTERN	IPUSVANYA	CISVOELR	HUNANGURP	KNSFEAT
Human corona 229E pol 1ab (3487)	TRECKC	THEMADEC	V PAEFK	UVANGLNA	NGPFDAL
Murine hepatitis pol 1ab (3864)					
Consensus (3940)	INSIFRM	ITLGVYNFR	KISVQELRY	YMNANGLRPI	PKNSFEAL

				Section 103
· (3979)	3979	,3990	4000	4017
avian infectious bronchitis pol 1ab (3359)	STNILIQ	IGGDRVLPIAD	VOAKLSTVXC	TTVVLMQLET
bovine coronavirus pol 1ab (3816)	MINEKLLG	IGGVPITEVSC	)FOSKLTEVKC	ANNVILNÕEO
Human corona 229E pol 1ab (3526) Murine hepatitis pol 1ab (3903)	FLSEKLMIS	LUGPRTIKVST	.VOSKātulikā	TNAMEMGILS
Murine hepatitis pol 1ab (3903)	MINERDIG	INGVPVIEVS	TOSR IDVA	ANNIEDENCEO
Consensus (3979)	MLNFKLLG	IGGVRVIEVSI	VQSKLTDVKC	TNVVLLNCLO
	Files to the control of the control			Section 104
(4018)	4018	,4030	4040	4056
avian infectious bronchitis pol 1ab (3398)	KLNVEARS	MHVMLVEIN	KLIASDDVĒE	CMDNIALGMET
bovine coronavirus pol 1ab (3855)	HTHVASTE	TWO CSMT	VALUE TA THE	AFFRIAGIST
Human corona 229E pol 1ab (3565)	NMNIASUR	EWATCVEME	KNLCDPET	AOELLIATEA
Murine hepatitis pol 1ab (3942)	HOHIASMA	HWOYCSTLE	ECLATSOBSV	AFDKLAOTTV.
Consensus (4018)	HLNIASNS	KLWQYCVTLHN	KILATSDLGV	AFDKLLOLLI
AND AND AND AND AND AND AND AND AND AND				Section 105
(4057)	4057	4070	4080	4095
avian infectious bronchitis pol 1ab (3437)	THECIDST	rorist	YCTÖILKRST	VENSVTOERS
bovine coronavirus pol 1ab (3894)	VLEANPAA	VOSKCLTSIE	vci dyakoni	VICALOSERV
Human corona 229E pol 1ab (3604)	FFLSKHSD	FG G	LVESYFENDS	TITSVASSEW
Murine hepatitis pol 1ab (3981)	VLFANDAÄ	VDSKCLASIE	EVSCDYVRDNQ	VICALOSERV
Consensus (4057)	VLFANPAA'	VDSKCL SIER	EVCDDYLKDNT	VLQALQSEFV
				—— Section 106
(4096)	4096	4110	,4120	4134
avian infectious bronchitis pol 1ab (3470)	HTERYAEX	REKNLYEKVI	LVDSKNGGVTQ	CELAAYRAMA
bovine coronavirus pol 1ab (3933)	NMAH RV.H.Y.	HV()KKNLDEAF	RSSGSANQ	OOLKOLEKAC
Human corona 229E pol 1ab (3637)	GMP A EVAL	TERQEYENAI	/ANGSSP	DIEKQUKEAM
Murine hepatitis pol 1ab (4020)	NMASEVE	SLAKKNLDEAR	KasgsanQ	OQIKQLEKAC
Consensus (4096)	NMPSFVEY	ELAKKNYDEAI	RASGSAN Q	QQIKQLEKAC
				Section 107
(4135)		4150	4160	4173
avian infectious bronchitis pol 1ab (3509)	和工作的VFD	FDLATOKRIDS	BERAMTIM	KEAEVTDERA
bovine coronavirus pol 1ab (3969) Human corona 229E pol 1ab (3672)	YIAKSAYE	FDRA ARHTE	kwadl7:Lunen	KEARINDKKS
Human corona 229E pol 1ab (3672)	EVALAEFD	PESSVQK INF	CHEQEAAAII.	DEARAVNRKS
Murine hepatitis pol 1ab (4056)				
Consensus (4135)	NIAKSAFD:	RDRAVQKKLE	RMADLALTNMY	KEARINDKKS
		·	The second secon	Section 108
(4174) avian infectious bronchitis pol 1ab (3548)	4174 418	0 4190	) 4200	4212
avian infectious bronchitis pol 1ab (3548)	KLVÄSLHA	LUFS, LKKII S	SEKLNVLFDQA	SSUVVELATM
bovine coronavirus pol 1ab (4008)	HVYSALQT	Mirshvrktidi	IQALNSILDNA	VKGCV-FI-NATI
Human corona 229E pol 1ab (3711)	LVYSAMHS	LT定GMLRR基準	15SVDTTLNMA	RNEVALESVE
Murine hepatitis pol 1ab (4095)	NVESALQT	MLESMVRKLDI	<b>VQALNSILDN</b> A	VKCCLBINAI
Consensus (4174)	KVVSALQT	LLFSMLRKLDI	<b>IQALNSILDNA</b>	VKGVVPLNAI

	Western A. S. S. Server January				- Section 109
(4213)	4213	4220	<u>4</u> 230	,4240	4251
avian infectious bronchitis pol 1ab (3587)	THENRY	PHILLIPS	ETWVKCVEG	VHUTIST	VVVVIDTV
bovine coronavirus pol 1ab (4047)	ESLAANT	LTITVEDK	SVYDQVVDN	VYVTTAG	NVWQIQTI
Human corona 229E pol 1ab (3750)	PATSAAR	TANANALDH	DSEVKMMVD	GF H AG	VANTLQEV
Murine hepatitis pol 1ab (4134)	<b>FSLTSNT</b>	TATIVELK	OVEDOVVDN	VYVTAAG	NVMHIOFU
Consensus (4213)	PSLSANT	LTIIVPDK	DVFVQVVDN	VYVTYAG	VVWNIQTI
					Section 110
(4252)	4252	<i>A</i> 260	4270	4280	4290
(4252) avian înfectious bronchitis pol 1ab (3626)	INAVETE	LHPTSTGS	GLTYCISGA	NIAWPSK	VNLTRNGH
bovine coronavirus pol 1ab (4086)	QDSDSTN	KQINEISD		DCNWPLY	TIANRHNE
bovine coronavirus pol 1ab (4086) Human corona 229E pol 1ab (3789)	KUNDOKK	VHIKDVIK		ENGELLV	WPLILTCE
Murine hepatitis pol 1ab (4173)	QDADUAV	KOLNEIDV		NSTWEEV	TAANEHNE
Consensus (4252)	QDADGTN	KQLNEIS		N NWPLV	I LNRHNE
					Section 111
(4291)	4291	4300	4310		4329
avian Infectious bronchitis pol 1ab (3665)	NKVDVVL	HETATIENEN	GVKTKACVA	GVDQAHC	SVESKCYY
bovine coronavirus pol 1ab (4116)	VSATVIQ	-NULLUFA	KLKTOVVNS	-GPDOTC	NTPTOCYL
Human corona 229E pol 1ab (3819)	RVVKLQ-	- NAVE IN G	KMKVKATKG	-EGDGGI	TSEGNAL
Murine hepatitis pol 1ab (4203)	VSTVVLQ	- MATELLINES Q	KLRTQVVNS	-GSDMNC	NTETQCYY
Consensus (4291)	VSV VLQ	NNELMPA	KLKTQVVNS	G DA C	NTPTQCYY
					Section 112
(4330) avian infectious bronchitis pol 1ab (3704) bovine coronavirus pol 1ab (4153)	4330	,4340	4350	1000 1 T440 2 03 TV 100 TV 100 TV 100 TV 100 TV 100 TV 100 TV 100 TV 100 TV 100 TV 100 TV 100 TV 100 TV 100 TV	4368
avian infectious bronchitis pol 1ab (3704)	TNISGNS	VVALTISS	NPNLAVASE	LNEAENQ	IYVDUDD
bovine coronavirus pol 1ab (4153)	NNSNNCK	IVYZILSD	VDGLKYTKI	LKDDSNF	VVIB DP5
Human corona 229E pol 1ab (3855)	NNEGGRA	FMY-YVTT	KPGMLYVKW	EHDSE-V	VTVE E2=
Murine hepatitis pol 1ab (4240)	NTTGTGK	TVYHĪLSD	CDGLLYTKI	VKEDONC	VVLETDET
Consensus (4330)	NNSGGGK	IVYAILSD	PGLKYTKI		
the state of the s	( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )	Www.Williams			- Section 113
(4369)	4369	4380	4390	maran amana ama dibitan dababat PT 50. N. W	4407
avian infectious bronchitis pol 1ab (3743)	CKEGMKV	GVKVEVV	MILIONTRS	IVFCMEL	TATSHVEV
bovine coronavirus pol 1ab (4192) Human corona 229E pol 1ab (3893)	CKFTVQD	VKGLKIKE	www.vkgcni	LARGWIV	SEISST R
Human corona 229E pol 1ab (3893)	CREVIDI	PTGPQIKY	S SVINLNA	IRECALL	FYIGATOR
Murine hepatitis pol 1ab (4279)					
Consensus (4369)	CKFSVQD	VKGTKIKA:	LYFVKNCNT		
- CALAMAC SPACE OF THE SPACE OF					- Section 114
(4408)	4408	4420		30	4446
avian infectious bronchitis pol 1ab (3782)	EUSKGHE	THEVDAVG	i strstai	LEADINC	KYVAAZNQ
bovine coronavirus pol 1ab (4231)	LOAG-TA	ABYASNSS	ILSIGAES	DIKKTYI	DFIQQGGT
Human carona 220E not 1ch (2022)	17 18 18 18 18 18 18 18 18 18 18 18 18 18	Mile and the second of the second of the second	TAX TRALEGY COMPANY	SYNTA A A SET	DATEOUAL
Human corona 229E pol 1ab (3932)	INVARIANCE	THE K 2 N 2 H		Market Commencer of the	DAYLULAR
Murine hepatitis pol 1ab (4318) Consensus (4408)	IQAG-TA	TEYASNSA	ILSTCAES!	DEKKTYL	DYIKQGGV

	-			Section 115
(4447)	4447	4460	4470	4485
avian infectious bronchitis pol 1ab (3821) bovine coronavirus pol 1ab (4269)	PEGNUVENT	VHN SEPATES K	PSPTPDOES	TEGAL SOLUTION
bovine coronavirus pol 1ab (4269)	PIANIMETEC	DHACTEMPTENK	PDATINGLS	YSCASUOT
Human corona 229E pol 1ab (3970)	EVGNOMENT	NGSCSGOWLLCT	IDSMTTONT	YCCASVCI
Murine hepatitis pol 1ab (4356)	TVTNENLALC	DHASTOMALITIK	PEATINGES	ISCASUCI
Consensus (4447)	PVGNCVKMLT	DHAGSGMAITIK	PDATTNQDS	YGGASVCI
				- Section 116
(4486)		4500	4510	4524
avian infectious bronchitis pol 1ab (3860)	TUPAHIAHIG	SVGNLDERCOFK	ASDUDIETT	EKDIVGEC
bovine coronavirus pol 1ab (4308)	MURARVEHE-	DVITLOKER	GKENOVEVG	TKULVSYV
bovine coronavirus pol 1ab (4308) Human corona 229E pol 1ab (4009)	CEAHVANE -	TMITTECQYK	CKWWOVYIG	TNDFIREC
Murine hepatitis pol 1ab (4395)	NOR'SRVEHE-	DYAGLGKLR	EKEV'QV-≎L <b>'</b> G	IKURVSYV
Consensus (4486)	YCRARVEHP	DVDGLCQLK	GKFVQVPIG	IKDPVSFV
,				Section 117
(4525)	4525 4530	4540	4550	4563
avian infectious bronchitis pol 1ab (3899)	LRNKTSTVCQ	CWIGYGOODSL	RQPKSSVQS	VAGASDED
bovine coronavirus pol 1ab (4343)	LINDUCQVCG	FURDGSESCVST	D	-Trugsku
Human corona 229E pol 1ab (4044)	PENTHORYEG	CWLNHGOTODRI		ATOSFIL
Murine hepatitis pol 1ab (4430)	HIND NOTES	EVRDGSUSCVET	G	
Consensus (4525)	LINDVCQVCG	FWRDGSCSCVST		SAIQSKD
Military Committee Committ		· · · · · · · · · · · · · · · · · · ·		- Section 118
(4564)	4564 4570	4580	4590	4602
avian infectious bronchitis pol 1ab (3938)	KNYDARES	S-EARLIPLASIA	CDPDVVKE	EDVCNKES
bovine coronavirus pol 1ab (4373)	TNE DAY, FET	SVDARLVPCASE	DSTOVOLYA	HATCHASV
Human corona 229E pol 1ab (4072)	NSYTHESAIRS	SAARDEPCNS	TDINYCVLA	I DVY3KDA
Murine hepatitis pol 1ab (4460)	THE HATE WIFE	SVNLRLYPOAS	LDTHYOUS	FPICHANR
Consensus (4564)	TNFLNRVRGS	SVDARLVPCASG		
(4000)	4000 4040	***		Section 119
(4603) avian infectious bronchitis pol 1ab (3976)	4603 4610	4620	4630	4641
bovine coronavirus pol 1ab (4412)	A SPIT QUALKA	DART ORDED ED	GNTEATHSX	TANGE OF LA
Human corona 229E pol 1ab (4109)	AGLGLINE VN	CURTURVUENGU		EAT PRIDE
Murino honofitie not 1ab (4109)	ACTOL VALUE			TITERCIK
Murine hepatitis pol 1ab (4499)	ACTOTAL PIN	CCRFQRVDEDGD	NUMERI	FVVKRT L
Condensus (4000)	MATCHMUTAN	CCKEQKVDEDGD		Section 120
(4642)	4642 465	50 <i>A</i> 660	4670	
avian infectious bronchitis pol 1ab (4015)	SNYCHERSON	EDINS - ENGLANT	Dion - Marketh	TYMTSO
bovine coronavirus nol 1ab (4447)	TYNEMEN	ERWEDCKFVAFL	DEATHORN	SRADUTA
bovine coronavirus pol 1ab (4447) Human corona 229E pol 1ab (4140)	STANDHEOSMIZ	NTTECOMATER	DESTRUCT	TYCHUSE
Murine hepatitis pol 1ab (4534)	PAYNKERE	ET.TWECCAMARI	RE ROY BURG	SEVELTV
Consensus (4642)	SVYNHEKSCY	ELLKDC VVAEH	DFFTFDVEC	SRVPNTVP
				~ x

			And the second s	— Section 121
(4681)	4681	4690	4700	4719
avian infectious bronchitis pol 1ab (4050)	QRITEXT NO	<b>LEPGYALEHE</b>	PRICEVLKET	VITY GCIEDY
bovine coronavirus pol 1ab (4486)	KDHTSYTHI	TLOYNERHE	DRNDGMEL(CDL	SIYAGGEQS
Human corona 229E pol 1ab (4179)	ODTLYAMA	A LCEADKNE	Deknoeveker	VLTGCCSTD
Murine hepatitis pol 1ab (4573)				
Consensus (4681)	QDLTKYTMI	DLCYALRHF	DRNDCEVLKEI	
				Section 122
(4720)		4730	4740	4758
avian infectious bronchitis pol 1ab (4089)	HPKWFEDN	DAYDETENS	KYYVMLAKMGP	IMRR-ELNAI
bovine coronavirus pol 1ab (4525) Human corona 229E pol 1ab (4218)	YFIK	DAX	DIINVYKKISP	CENRULVSAT
Human corona 229E pol 1ab (4218)	YBEM	NKE KETHE	DIHRVYAALOK	/VANAMEKCV
Murine hepatitis pol 1ab (4612)	YBOK	DNYOFWENE	DIMNAKKIMB.	ENESTENTA
Consensus (4720)	Y FEKI	KDWYDPIENP	DIINVYKKLGP:	
/ Ampropa	4750	4 119 119 119	1700	— Section 123
(4759) avian infectious bronchitis pol 1ab (4128)	4/09	<u>4770</u>	4780	4797
hoving coronavirus pol 1ab (4500)	E E GN LPINET			SILEUK DARWA
bovine coronavirus pol 1ab (4560)	A SCHEMST			THINI A COLUMN
Human corona 229E pol 1ab (4253) Murine hepatitis pol 1ab (4647)	KAADATIKA			
Consensus (4759)	FFAD LVE	CGLVGVLTLD	NODLNGKEYDE	CDEVKTAPCC
			a, z a a n a n a a a a a	Section 124
(4798)	4798	4810	4820	4836
(4798) avian infectious bronchitis pol 1ab (4167) bovine coronavirus pol 1ab (4599)	EVEVEDE	Poteské tídaki	TOATAPERYFET	YD-VHKGYKS
bovine coronavirus pol 1ab (4599)	CVATADS	A THE MIT!	CHAI DCELYVN-	NAYRL
Human corona 229E poi 1ab (4292)	LEEPYCTS	FC-MENEVNG!	INCLASECEME:	SDIFGODEKT
Murine hepatitis pol 1ab (4686)	CVAVADSS	erangulenar.	CHALDSLLEVN-	GTYRE
Consensus (4798)	GVPVADSYY	YSYMMPMLTM	THALDSELFVN	D NAYKS
No. of Additional Addi			*	Section 125
(4837)	4837	4850	4860	4875
avian infectious bronchitis pol 1ab (4205)	You Live Y	EEROELLOR	K NYWDQE: A PI	NCRDJSDDR2
bovine coronavirus pol 1ab (4633) Human corona 229E pol 1ab (4331)	FITVOITE	DYLLENHAL	FEILHWSMPIE PI	TTVDCQDDRC
Human corona 229E pol 1ab (4331)	FULLKEER	EHKEVLEN	\$#KYNGODYHÐ	DCVDSHDEMC
Murine hepatitis pol 1ab (4720)	EDUVQUE	DFELE MUTE	CERHESMTEH E	TCECELDRO
Consensus (4837)	EDTTÖXDE.	LOHKTETENK	YFKHWSQDYHPI	
(4070)	4070	4000		Section 126
(4876) avian infectious bronchitis pol 1ab (4244)	40/0 \$7575883558	4890	4900	4914
hoving coronavirus not tab (4244)	THE ATEN	HUT SHULL QI	DHUNDCHKVEV ATTRACTOR	LEWIS BLANCE
bovine coronavirus pol 1ab (4672) Human corona 229E pol 1ab (4370)	TTELOGRAPH	Lar orny Let N.I.	A D C D I C D V I V I	TO VET VVD L
Murine hepatitis pol 1ab (4759)	TTHOMNELL	THEOMOTION		MENSEVUETY
			CFGPLVRQIFV	
Consciludo (Foro)	· · · · · · · · · · · · · · · · · · ·	THE STATE OF THE SAT	OF OF THANKERS AT	CALLANDEG

	A CONTRACTOR OF THE PARTY OF TH				Section 127
(4915)	4915 4	920	4930	4940	4953
avian infectious bronchitis pol 1ab (4283)	YHSKOT	CVIMIQ	NTMSFSKMC	L'SQUMOFVG	BATLVGT
bovine coronavirus pol 1ab (4711)	<b>。</b> 校社太学的下	GIVMPM	)VDTHRYRLS	LKDALLYAR	BIALHVAS
Human corona 229E pol 1ab (4409)	XHENGT	GLYWNK	VNIHSTRLI	ITELLQFVT	DETOIVAS
Murine hepatitis pol 1ab (4798)	X, CX P B T	CVMMNM	YDTHRYRLS	LKDILLYAA	ETATH AS
Consensus (4915)	AHAKET	GVVMNMI	OVDTHRYRLS	LKDLLQFVA	DPALHVAS
to the second of					Section 128
(4954)	4954	4960	4970	,4980	4992
avian infectious bronchitis pol 1ab (4322)	SNNIVE	deuskii	CALFSALT	HÇIŞÇÎÇÊ ÇIHE	VKDIII DEA
DOVIDE COTORIAVITUS DOI TAD (4750)	The Cart And And And And And And And And And And	ALCOHOLD STREET	THE TAX PROPERTY OF THE PARTY O	18. Thank (1) 18 18 18 18 18 18 18 18 18 18 18 18 18	The state of the s
numan corona 229E poi 180 (4448)	SPALVE	KELVOE	VALLSTILE	SHIVELLINE	GENTLE POPT
Murine hepatitis pol 1ab (4837)	ASANL	DRIGGE	Varlascyk	Empresent	PORTYPUE
Consensus (4954)	ASALVD	LRTCCFS	SVAAITSGVT		
22000	4000	5000			Section 129
(4993)	4993	,5000	5010	5020	5031
avian infectious bronchitis pol 1ab (4361)	EKASME	KI-S SILI	Paralle X201	(5N AYATIN JEYID	YZRYLBRU
bovine coronavirus pol 1ab (4789)	PICO SELE	NICE INDVI			1 Y <b>K</b> Y L L P TL
Human corona 229E pol 1ab (4487) Murine hepatitis pol 1ab (4876)	T diamet			SDANKE DD	
Consensus (4993)	LSKCLL	KEC6 GAI	LEN MARTINE	CMARTHEN	TARRED LIE
	поконн	KEGSSVE	 Prusstandn	GNAAITDIN	Section 130
(5032)	5032	5040	5050	,5060	
avian infectious bronchitis pol 1ab (4400)	MFB CO	TIECTES	A SERVICE CASE	0000 186 8 0 18 0 18 0 18 1	0100 \$ 2.31 THE PROPERTY OF
bovine coronavirus pol 1ab (4828)	MV III KI	ATT PVT A	NVK PET O	CONTRACTOR	TANK VINES
Human corona 229E pol 1ab (4526)	LIG	ARVAYO	AARSEDCSE	CET PER E	Wir Tiet, Nice
Murine hepatitis pol 1ab (4915)	NVATRO	COEVLE	Vinkysetse	CCCTPATION	TUNDEN
Consensus (5032)	MVDIKQ	LLFVLE	/VAKYFEIYE	GGCIPASOV	IVNNYDKS
					Section 131
(5071)	5071	5080	,5090		5100
avian infectious bronchitis pol 1ab (4439) bovine coronavirus pol 1ab (4867)	MGYRFI	erness Ara	JAEMS-LEE	COEFEIN	KUMAFULI
bovine coronavirus pol 1ab (4867)	ALYPER	REGRERI	NEALSELF	COELYAYTE	RNVERBLI
numan corona 229E poi 1ab (4565)	MAKELIN	k-94GEKAGI	NYESISYEE	CUATFSLEE	RNILEMM
Murine nepatitis poi 1ab (4954)	RUXEFN	626KAR1	YYEALSFEE	GDETYAY:::::	REVISITE
Consensus (5071)	AGYPFN	KFGKARI	YYEALSFEE	QDEIFAYTK	RNVLPTLT
		A CONTRACTOR OF THE PARTY OF TH		£	Section 132
(5110)	5110	5120	513	0	5148
avian infectious bronchitis pol 1ab (4477)	NWATER L	ALBAKNI	HPPVAGUSI	LSTATION ROF	içi i üksli
bovine coronavirus pol 1ab (4906)	OMPTHA	AISAKNI	HALTMARTST	IST MEGIME	and the value
Human corona 229E pol 1ab (4604) Murine hepatitis pol 1ab (4993)	DINIERY	ent Gaet	LARTYGOMEL	LATEST P.QT	jokeliksi.
Murine nepatitis pol 1ab (4993)	<b>数</b> N的现在表	WITAKN!	<b>ARIVACYCI</b>	LSTRT GTME!	lor crk3t
Consensus (5110)	QMNLKY.	AISAKNF	RARTVAGVSI	LSTMTGRQFI	HQKCLKSI

					Section 133
(5149)	5149	(PFP*()= ****	5160	5170	5187
avian infectious bronchitis pol 1ab (4516)	VNTEN	ASTUE	1122 Yac	DNHIRHLIQG	VEDPILLERIO
DOVIDE COMPANIES DOLLAR (AUAR)	AL 1845 42 Aug 20 1	Control of the Contro	362310 24 32 32 33 4 3	Call in the Property of the Pr	All a gain, or or "and the delight. The tell lands are the agent.
Human corona 229E pol 1ab (4643)	VATIN	a Till Lili	TRAFYSC	N. S. KNI MAD	PDDPKEMSWD
Human corona 229E pol 1ab (4643)  Murine hepatitis pol 1ab (5032)	AATRG	VP WITE	TILETES SE	ODMARR, IKD	*DS VIMCUN
Consensus (5149)	VATRN	<b>VPVVI</b> G	TTKFYGG	WDNMLRRLIKD	VDDPVLMGWD
					— Section 134
(5188)	5188		5200	5210	5226
(5188) avian infectious bronchitis pol 1ab (4555)	T PROD	ZHHIL	LETAASL	V KAR GUT NA 6 S	WSERISRTYN
bovine coronavirus pol 1ab (4984)		XXMPNI	LUIVSSL	VITARKHRAPTIS	OSDRFYATAN
Human corona 229E poi 1ab (4682)	Makked	KAUESM	IRMLSAM	ILGSHAVTGOT	ASTIKEVHUSE
Murine hepatitis pol 1ab (5071)	T.EXOD	AMENI	<b>DELVSSL</b>	VEARISTIDSCES	HIDRESEA
Consensus (5188)	YPKCD	RAMPNI	LRIVSSL	VLARKHDSCCS	SDRFYRLAN
					Section 135
(5227)	5227		5240	.5250	5265
avian infectious bronchitis pol 1ab (4594)	r.Capv	SETEL	ATGELWY	Krisensaarkin	H-F-X Courts In taking
bovine coronavirus pol 1ab (5023)	ECHOV	SEIVM	CGCCYYV	Poleki segoan	Taransvent
bovine coronavirus pol 1ab (5023) Human corona 229E pol 1ab (4721)	LAUV	TUVEY	SNEGFOF	alika dip <b>r</b> ista dipr	PAYANSTATE
Murine hepatitis pol 1ab (5110)	TC2CW	SITIM	CGCCYSV	ĸ₽ecrssacci	NATE A NAME OF
Consensus (5227)	ECAQV:	LSEIVM	CGGGYYV	KPGGTSSGDAT	TAFANSVFNI
					Section 136
(5266)	5266		5280	5290	5304
avian infectious bronchitis pol 1ab (4633)	IORTS	MWARL	LSVITED	VYDNIKSICY	ETSOOVERV
bovine coronavirus pol 1ab (5062)	COAVS	ANVCAL	MSCNGNK	LEDLSIRALUW	REVSEVERSD
Human corona 229E pol 1ab (4760)	FOXV.	SMINCW	LSVNSSN	CHNENVKKLOR	OLDNCKENS
Murine hepatitis pol 1ab (5149)	CONVEY	YNVCSL	MACNGHK	IEDLSTRELOK	RLESNVARAD
Consensus (5266)	CQAVS	NVCAL	LSVNG K	IEDLSIKALQK	RLYSNVYRAD
		<del></del>			Section 137
(5305)	5305 5	310	5320	5330	5343
avian infectious bronchitis pol 1ab (4672) bovine coronavirus pol 1ab (5101)	NFDPA	EKE	SYZCHNE	ale lering to	CYNNTLAKOG
bovine coronavirus pol 1ab (5101)	MVIST	YTEY	EFINERS	SMITEL TING V	CONSDYNSKE
Human corona 229E pol 1ab (4799)	NVLES	PDDF	GY1.QLHE	Militarts	UNKTYAGLO
Murine hepatitis pol 1ab (5188)	HVDPA	<b>ISEY</b> :	EFINKHU	SMMELSIIDGY W	CANSEFASKO
Consensus (5305)	NVDPA	VSEFY	EFLNKHE.	SMMILSDDGVV	CYNSTYASKG
	***				- Section 138
(5344)		5350	,536	0 ,5370	5382
avian infectious bronchitis pol 1ab (4711)	LVADES	GEREV	LTOONNE	PHADSTONVEP	TRKCLLPP
bovine coronavirus pol 1ab (5140)	YTHNE	ALOOV	L velounse	FISESK GWVF N	DINNEPHBE
bovine coronavirus pol 1ab (5140) Human corona 229E pol 1ab (4838)	YIND	AEKAT	Liliyagu	HISTARCTTE	Disigration
Murine hepatitis pol 1ab (5227)	YIRNI	VOOSA	i. Sokni	MSEAFONVET	DIEKCEREE
Consensus (5344)	YIANIS	BAFOOV	LYYONNV	FMSEAKCWVE	DIEKGPHEFC
• • • • • • • • • • • • • • • • • • • •					

1. Philipping and Administration of the Control of				Se	ection 139
(5383)	5383	,5390	5400	5410	5421
avian infectious bronchitis pol 1ab (4750)	SUITEMI	VEVDGEPK	Pierungski	igacvey(t	VDELEP
bovine coronavirus pol 1ab (5179)	SCHIME	VKMDGDDV	LLBYPI BSK	LGAGCEVAL	LLREDS
Human corona 229E pol 1ab (4877)	STORESTON O	TVDENCKY	in the ball of	THE X MAXIMUM	THEFT
Murine hepatitis pol 1ab (5266)	EQUIPME EMPLEON	VKMDGDEV	MIRYPDESE	LGAGCEVER	LIKEDS
Consensus (5383)	SQHTML	VKMDGDDV	YLPYPDPSRI	LGAGVFVDD	LLKTDS
					ection 140
(5422)	5422	5430	5440	5450	5460
avian infectious bronchitis pol 1ab (4789) bovine coronavirus pol 1ab (5218) Human corona 229E pol 1ab (4916)	VAVME	YIATWIES	SPIVH ENR	SKRV HEVILE	AVTERS
bovine coronavirus pol 1ab (5218)	VLITER	FVSL	YPTVYFENE	MORVIEVAL	TYTER
Human corona 229E pol 1ab (4916)	Witiek .	Zwielny	NEISKIPKP	R KINIYAT.	กพงหน
Murine hepatitis pol 1ab (5305)	·/T.Tarida	PVSTEENS	YEAR WALLEN	CONTRIBUTO	EVIERT
Consensus (5422)	VLLIER	FVSLAIDA	YPLVYHENPE	YOKVERVYL	RYTKKI.
,					ection 141
(5461)	5461	5470	.5480		5400
avian infectious bronchitis pol 1ab (4828)	YOULSO	NMIMDYSE	VMDIDKGSK	WEORITANN	FRAPET
bovine coronavirus not 1ab (5257)	NITHICAL	OTINGVIN	TARTETION	min nicom Crake	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
Human corona 229E pol 1ab (4955)	NKTINE	GVIESFIV	TITDEHESKE	DITECTION	Up Z C P V
Murine hepatitis pol 1ab (5344)	YNDIGN	OTEBSYSV	TESTEDGOE	TDETEVENI	YIRSAN
Consensus (5461)	YNDLGN	QILDSYSV	ILSTCDGSKF	WDESFYKNM	YLRSTV
A. A. Marine and development of the second o					ction 142
(5500)	5500	,5510	,5520		5538
avian infectious bronchitis pol 1ab (4867)	LOSCEV	CHICAROR	IBRUGNÖTER	in radicient	NICOMHIE
bovine coronavirus pol 1ah (5296)	MARKEN	THE TAX OF THE	O'T-TWO-BITTER		
Human corona 229E pol 1ab (4994)	LUAAFL	oriulig5dH	VETEGODELNE	fMCCTL CAT	DHVFGI
Human corona 229E pol 1ab (4994) Murine hepatitis pol 1ab (5383)	TOSVCA	Carles S S 73	Schobseck	FILCONCAS	LOWMS
Consensus (5500)	LQSVGA	CVVCSSQT	SLRCGSCIRK	PLLCCKCCY	DHVMAT
		A II A MILE MANAGEMENT OF THE STATE OF THE S			ction 143
(5539)	5539	5550	5560		5577
avian infectious bronchitis pol 1ab (4906) bovine coronavirus pol 1ab (5335)	DHINN	SINFIIIS	QLOGGEAMIT	Printle GMSY	FCGWIE
bovine coronavirus pol 1ab (5335)	PHRYVI	SVSPYVCN	AGGGÖVNOVI	X I ZIJG EMS N	YEEDU
Human corona 229E pol 1ab (5033)	DEKFIL	AITPAVEN	TSTERVNOL	KUMLESINI	YOVDHE
Murine hepatitis pol 1ab (5422)	DHKXVI	SVSFIVEN	SPGCDVNDVT	KLYDJEMSY	YCEDHR
Consensus (5539)	DHKYVL	SISPYVCN	SPGCDVNDVT	KLYLGGMSY	YCEDHK
				Se	
(5578)	5578	559	0 .560	00	5616
avian infectious bronchitis pol 1ab (4945)	NKLOIP	EVSNOTEE	CITRANGACS	ENWDDFNOL	Δ.Ψ.Ψ N198 C
bovine coronavirus pol 1ab (5374)	POYSER	DVMNEMVE	GL/KOSCTES	PYIDDEVRI	ASCKUT
bovine coronavirus pol 1ab (5374) Human corona 229E pol 1ab (5072)	PHLUFP	icsaenve	GLYKSSALGS	MDIDVERKI	STSDWS
Murine hepatitis pol 1ab (5461)	PQYAFK	LVMNUMVE	CLYKOSCTOR	PYTEDENKT	ASCKWT
Consensus (5578)	PQYSFP	LVSNGMVF	GLYKOSCTGS	PYIDDENKT	ASCKWS

		AT THE RESIDENCE OF THE PARTY O			- Section 145
(5617)	5617	5	630	5640	565
avian infectious bronchitis pol 1ab (4984)	IVEPALE	AURCSDS	FIRELAR	TVKETDELH	KOOPASAE
bovine coronavirus pol 1ab (5413)	DVDDXI	ane cref	UNKLE ARE	TOSPTE AF	KQSYKSAT
Human corona 229E pol 1ab (5111) Murine hepatitis pol 1ab (5507)	DIRDYKI	e NDA KIBS	FERLIFARE	LVILEKEISV	KSSY MY T
iviunne nepatitis pol 1ab (5500)	EVDD: VL	#NECTEF	KLEP KE	TONATETAE	FQCY LS AT
Consensus (5617)	DVDDYIL	ANECTES	LKLFAAE	TVKATEEAF	KQSYASAT:
			Marie Parameter ( ) and ( ) an		— Section 146
(5656)	5656		5670	5680	569
avian infectious bronchitis pol 1ab (5023)	RIVESOR	CLIC L'SVI	PEETREE	LARRYATING	YHEURTSKY
DOVINE CORONAVIRUS DOI 18D (5452)	OBTUSES	MINTER CAR	TOTAL	CALITY STATE OF THE COLUMN	TITLE IN TAXABLE SECTION
Transport of the factor of the factor	KELVEREK		SOMAKIM	BURNSFEE	ROTAKID SINI
iviurine nepatitis poi 1ab (5539)	REIVSDR	FILLISH	TENVRED	LIKKLYVETG	PHPONNCE
Consensus (5656)	REIVSDR	ELILSWE	IGKVKPP	LNKNYVFTG	YHFTKNSK
					Section 147
(5695)	5695 570	0	5710	5720	573
avian infectious bronchitis pol 1ab (5062)	QLODETE	GEGEGKD	V-WYYKA	PSWALTSVILL	ineverin
bovine coronavirus pol 1ab (5491)	MILE WIND	O'CRT TON	C-SVVDA	dan viva e tr	. T
Human corona 229E pol 1ab (5189)	OWNER	TENTINYCC	ram on vivo	this film whiles a steam	ART POST OF STREET
iviume nepatitis por Tab (5578)	VLGEYVII	DKSELTN	G-XXXRA	TTE YHTISVGI	OVELLEN
Consensus (5695)	VLGEFVF	OKSELTN	G VYYKA	TTTYKLSVG	OVFILTSH
	MP	W	*****		Section 148
(5734)	5734 57	40	,5750	5760	5772
avian infectious bronchitis pol 1ab (5100)	VVSLVE	CRUOT	FSRFVNI	D DATTEM STEEL OF	VINIPLA
povine coronavirus pol 1ab (5529)	VANISAC	FLVFDE-	NYSSIRE	asvygut.em	OFNIVAN
numan corona 229E poi 1ab (5228)	WAPHREE	MANOEK	YSULIYKT	HPSENWSDIA	ANTICPY
wurme nepatitis por Tab (5616)	WSSLSAP	(LVP)E-	NYTSIRE	ASVYS OPETI	OHNVPNYC
Consensus (5734)	VASLSAP	LVPQE	NYTSIRL	ASVYSVPETI	ONNVPNYO
		***************************************	<del>17.</del>		Section 149
(5773)	5773 5	780	5790	.5800	581
avian infectious bronchitis pol 1ab (5139)	IVCKOKR	PEVOTE P	rigate sur po	CHETA WESK	en care per a c
bovine coronavirus pol 1ab (5567) Human corona 229E pol 1ab (5267)	HIGMKRY	: Wolfe of the control of the contro	ETSSAL	ARTERIA	HAVEVES
Human corona 229E pol 1ab (5267)	LIGKORIS	orași de la constantia de la constantia de la constantia de la constantia de la constantia de la constantia de	GSGX HIC	SIGTOVY	ZBTOETA
Murine nepatitis pol 1ab (5654)	HIGMKRY(	E PRODVED	ATCK SHT/	ATTE TAR FIDE	LERVIVEREZ
Consensus (5773)	LIGMORY	TVOGPP	GSGKSHL	AIGLAVYYCI	PARVVFTAC
			**************************************		- Section 150
(5812)	5812	5820	,5830	5840	
avian infectious bronchitis pol 1ab (5178)	DHAAVAA	CEKAFK	FIKVDDC	ER VEORTT	herskele
povine coronavirus poi 1ab (5606)	PER AND AND	的 可它含义化	FINT MINE	PIZETINA KUDA	DEN VITA
Human corona 229E pol 1ab (5306)	智可以深处的名	CASSAUT	AYSMOKES	CONTRADAD	PHYCLINE
Murine hepatitis pol 1ab (5693)	SHALL	CEXAHR	FLUINDO	PANA PANA PANA	DOWN REST
Consensus (5812)	SHAAVDAI	CEKAHK	FLNINDC	CRIVPAKVRU	APPROPRIES TO THE TRANSPORT OF THE TRAN

Murine hepatitis pol 1ab (5732) DTTRKTVFTTTBALPEVNATIVVSTALLELSVE  Consensus (5851) NDTTRKYVFSTINALPEVVTDIVVVDEVSMLTNYELSVI  Section 152					— Section 151
Dovine coronavirus pol 1ab (5645) #DTTRKY VETTI ALFEMYT TVVVII F. PLET TESSAM Human corona 229E pol 1ab (5345) #NINSAD VISTVIA LIEVINATI VVVII F. PLET VISTVIA LIEVINATI VVVII F. PLET VISTVIA LIEVINATI VVVII F. PLET VISTVIA LIEVINATI VVVII F. PLET VISTVIA LIEVINATI VVVII F. PLET VISTVIA LIEVINATI VVVII F. PLET VISTVIA LIEVINATI VVVII F. PLET VISTVIA LIEVINATI VVVII F. PLET VISTVIA LIEVINATI VVVII F. PLET VISTVIA LIEVINATI VVII F. PLET VII F.	(5851)	5851	5860	5870	5889
Murine hepatitis pol 1ab (5732) ETTRKYYTITALELUVTDIVVVDEVSMLTNYELS VICTORISSUS (5851) NDTTRKYVFSTINALPEVVTDIVVVDEVSMLTNYELS VICTORISSUS (5851) NDTTRKYVFSTINALPEVVTDIVVVDEVSMLTNYELS VICTORISSUS (5850) 5800 5900 5910 5923 avian infectious bronchitis pol 1ab (5256) ECKINYO VVO VQD PAR PRINTIPLING SISPKDY VVID bovine coronavirus pol 1ab (5844) NARTRAKIY SIGILA FLIVYLISKGTLE RYFTY TO Human corona 229E pol 1ab (5344) NARTRAKIY SIGILA FLIVYLISKGTLE RYFTY TO Consensus (5890) NARISYKHYVYI GDPAQLPAPRVLISKGTLE RYFTY TO CONSENSUS (5890) NARISYKHYVYI GDPAQLPAPRVLISKGTLE RYFTY NOVT SECTION (5825) 5929 5940 5950 5967 5967 5967 5967 5967 5967 5968 5950 5967 5967 14 NARTSKRY VICTORISK SECTION (5825) 5929 5940 5950 5967 14 NARTSKRY VICTORISK SECTION (5825) 5929 5940 5950 5967 5967 14 NARTSKRY VICTORISK SECTION (5825) 5929 5940 5950 5967 14 NARTSKRY VICTORISK SECTION (5825) 5968 5950 5967 5967 14 NARTSKRY VICTORISK SECTION (5825) 5967 5967 14 NARTSKRY VICTORISK SECTION (5825) 5967 5967 14 NARTSKRY VICTORISK SECTION (5825) 5968 5960 6006 5967 5967 5967 5967 5967 5967 5967 596	avian injectious bronchitis pol 1ab (5217)	HDTGKK 1	PSTINIA	WSCPALLABETA	METNYENDFI
Murine hepatitis pol 1ab (5732) BTREKTYTT LTABLEL VTETVING BETTEL VTETVING BET	Dovine coronavirus poi 1ab (5645)	HOTTRKYV	ERTINAL P	MVTDIVVVILLA	MULLICETERA
avian infectious bronchitis pol 1ab (529) 5890 5900 5910 5928  avian infectious bronchitis pol 1ab (5255) GCKINIYONA VADPAG PRIENTILING-BISSERDYNVI Dovine coronavirus pol 1ab (5384) MORISYRIITIN VCITOR FIVE INTERCEMENT DEPRENTICE RYPTIVE Consensus (5890) NARISYRHYVYIGDPAQLPAPRVLLSKGTLE RYPTISM Consensus (5890) NARISYRHYVYIGDPAQLPAPRVLLSKGTLE RYPTISM Consensus (5890) NARISYRHYVYIGDPAQLPAPRVLLSKGTLE RYPTISM Consensus (5890) NARISYRHYVYIGDPAQLPAPRVLLSKGTLE RYPTISM Consensus (5890) NARISYRHYVYIGDPAQLPAPRVLLSKGTLE PKYFNVVT Section 153  avian infectious bronchitis pol 1ab (5294) NEWCVGKETITE AKTYRUT KEIL DIT GETT DEFT DEFT NAND Dovine coronavirus pol 1ab (5723) KLYCCLG FILL CTI NICKE VERT DIT GETT VERN WITH RAKN Consensus (5999) KLMCCLG FILL CTI NICKE VERT DIT GETT VERN WITH RAKN Consensus (5999) KLMCCLG FILL CTI NICKE VERT DIT ALL WALLE REPORT OF A VIA AND LKARN Consensus (5999) KLMCCLG FILL CTI NICKE VERT DIT ALL WALLE REPORT OF A VIA AND LKARN Consensus (5999) KLMCCLG FILL CTI NICKE VERT DIT ALL WALLE REPORT OF A VIA AND LKARN CONSENSUS (5999) KLMCCLG FILL CTI NICKE VERT DIT ALL WALLE REPORT OF A VIA AND LKARN CONSENSUS (5999) KLMCCLG FILL CTI NICKE VERT DIT ALL WALLE REPORT OF A VIA AND LKARN CONSENSUS (5999) KLMCCLG FILL CTI NICKE VERT DIT ALL WALLE REPORT OF A VIA AND LKARN CONSENSUS (5999) KLMCCLG FILL CTI NICKE VERT DIT ALL WALLE REPORT OF A VIA AND LKARN CONSENSUS (5999) KLMCCLG FILL CTI NICKE VERT DIT ALL WALLE REPORT OF A VIA AND LKARN CONSENSUS (5999) KLMCCLG FILL CTI NICKE VERT DIT ALL WALLE VERT DIT	DUNIAN COLONA ZZ9E DOLTAN (5345)	SOUTH TO THE TANK A STORY AND A STORY ASSESSMENT	TO CHARLES STATE I NAME OF COMPANY	THE TO STORY THE PROPERTY OF THE PARTY OF TH	the state of the s
avian infectious bronchitis pol 1ab (529)  avian infectious bronchitis pol 1ab (5256)  BY SERVEY FY TO THE ACTION OF THE STAND STAND OF THE STAND OF	iviurine nepatris poi 1ab (5/32)	MPTTRKLY	TTILITY NAMES	<b>LYTUTIVYTHY</b>	ML'HYELEVI
(5890) 5890   5900   5910   5928	Consensus (5851)	NDTTRKYV	FSTINALPE	CVTDIVVVDEVS	MLTNYELSVI
avian infectious bronchitis pol 1ab (5255)   Fight TMY ONVP, VSID ASSEPTION OF SLISP KDY INVENDED AND INCOMPANIES POLITICAL ASSESSED FOR INVENTED AND INCOMPANIES PROPERTY IN THE ASSESSED AND INVENTED AND INCOMPANIES PROPERTY IN THE ASSESSED AND INCOMPANIES PROPERTY IN THE ASSESSED AND INVENTED AND INCOMPANIES PROPERTY IN THE ASSESSED AND INVENTED AND INCOMPANIES PROPERTY IN THE ASSESSED AND INVENTED AND INCOMPANIES PROPERTY IN THE ASSESSED AND INVENTED AND INCOMPANIES PROPERTY IN THE ASSESSED AND INVENTED AND INCOMPANIES PROPERTY IN THE ASSESSED AND INVENTED AND INCOMPANIES PROPERTY IN THE ASSESSED AND INVENTED AND INCOMPANIES PROPERTY IN THE ASSESSED AND INVENTED AND INVE			,		— Section 152
Murine hepatitis pol 1ab (5772) MRYSAKHYVIIGTRA LLEVILINKGTLERKYPISST  Consensus (5890) NARISYKHYVYIGDPAQLPAPRVLISKGTLERKYPISST  Consensus (5890) NARISYKHYVYIGDPAQLPAPRVLISKGTLERKYPISST  (5929) 5929 5940 5950 5967  avian infectious bronchitis pol 1ab (5294) MENOVENKELTERTAKCTECKEL DET GTT DGRIFTIANN bovine coronavirus pol 1ab (5723) KLECLGFISTLERKYELTERTAKCTECKEL DET GTT DGRIFTIANN bovine coronavirus pol 1ab (5723) KLECLGFISTLERKYELTERTAKCTECKEL DET GTT DGRIFTIANN bovine coronavirus pol 1ab (5810) KLECLGFISTLERGY REPORT DET GTT REPORT DE GRIFTIANN LIKAKN Consensus (5929) KLECLGFISTLEGT REPORT DE GRIFTIANN LIKAKN Consensus (5929) KLECLGFISTLEGT REPORT DE GRIFTIANN LIKAKN (5968) 5968 5980 5990 6006  avian infectious bronchitis pol 1ab (5333) PERETTAVI VENNGNIS DIGHESG AYETT LIEFVKDEVC bovine coronavirus pol 1ab (5333) PERETTAVI VENNGNIS DIGHESG AYETT LIEFVKDEVC bovine coronavirus pol 1ab (5462) BA KQERTTERGE - SVQVDNIS STARR LIDVVKRETH Murine hepatitis pol 1ab (5462) BA KQERTTERGE - SVQVDNIS STARR LIDVVKRETH Murine hepatitis pol 1ab (5462) BA KQERTTERGE - SVQVDNIS STARR LIDVVKRETH Murine hepatitis pol 1ab (5372) REGRIF LIDVAK VENTERGE SAVINGQI HILIKKFLK Consensus (5968) EASSLCFKVYYKG VTHESSSAVINGQI HILIKKFLK SCENG BOVINE CORONAVIRUS pol 1ab (5372) REGRIF LIDVAK RESTERGE SAVINGQI HILIKKFLK SCENG BOVINE CORONAVIRUS pol 1ab (5372) REGRIF LIDVAK RESTERGE SAVINGQI HILIKKFLK SCENG BOVINE CORONAVIRUS pol 1ab (5485) KIST SKAVITIS PLAS GIVVAK VLEIGT OTO TABERGE BOVING CORONAVIRUS pol 1ab (5485) KIST SKAVITIS PLAS GIVVAK VLEIGT OTO TABERGE BOVING CORONAVIRUS pol 1ab (5485) KIST SKAVITIS PLAS GIVVAK VLEIGT OTO TABERGE BOVING CORONAVIRUS pol 1ab (5587) AND SWSKAVFISPIN SQNYVAK VLEIGT OTO TABERGE BOVING CORONAVIRUS pol 1ab (5587) AND SWSKAVFISPIN SQNYVAK VLEIGT OTO TABERGE BOVING CORONAVIRUS pol 1ab (5587) AND SWSKAVFISPIN SQNYVAK VLEIGT ARK GITCAVIS MM Human corona 229E pol 1ab (5587) AND VLEIGT ARK GITCAVIS MM Human corona 229E pol 1ab (5587) AND VLEIGT ARK GITCAVIS MM Human corona 229E pol 1ab (5587) AND VLEIGT ARK GITCAVI	(5890)	5890	,5900	5910	5928
Murine hepatitis pol 1ab (5771) # \$RV\$AKHYVIIGTPA LLEAV PLNKGTLE RYPRISHED Consensus (5890) NARISYKHYVYIIGTPA LLEAV PLNKGTLE RYPRISHED CONSENSUS (5890) NARISYKHYVYIIGTPA LLEAV PLNKGTLE RYPRISHED CONSENSUS (5890) NARISYKHYVYIIGTPA LLEAV PLNKGTLE RYPRISHED CONSENSUS (5890) NARISYKHYVYIIGTPA LLEAV PLNKGTLE RYPRISHED CONSENSUS (5929) 5940 S950 S967 5967 5967 5967 5967 5967 S968 S960 S950 S960 S960 S960 S960 S960 S960 S960 S96	avian infectious pronchitis pol 1ab (5256)	HCKINZOX	VMTVSIDEAS	EPART FING-S	LSEKDYNVV
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ARTSYRHYVYIGDPAQLPAPRVLLSKGTLEPKYFNVVT  Section 153  (5929) 5929 5940 5950 5967  avian infectious bronchitis pol 1ab (5294) NENVCVKEDIFIAKCVECT KEILDTVGTI DCRFIANN bovine coronavirus pol 1ab (5723) KIT CCLC FIFT, CTLV CKEILDTVGTI DCRFIANN Human corona 229E pol 1ab (5423) QR CALGEDVFTHKGTE RATTINT FELTEN FVPVK Murine hepatitis pol 1ab (5810) KINCCIG BUTLOTT AR KEILDTVSALVYENKLKAKN Consensus (5929) KLMCCLG PDIFLGTCYRCPKEIVDTVSALVYENKLKAKN Section 154  (5968) 5958 5980 5990 6006  avian infectious bronchitis pol 1ab (5333) PERRETT VIVNNGNSDMGHESG AYPTTLE EVKDEVC bovine coronavirus pol 1ab (5762) ES SI SVYYKG — VITHESSSAVING LYITNKFIK Human corona 229E pol 1ab (5462) EA KQUELTERG — SVQVDNGS SINRR LDVVKRELH Murine hepatitis pol 1ab (5849) DN SMC KYYKG — CTTHESS AV MQQ LYITNKFIK Consensus (5968) EASSLCFKVYYKG VTHESSSAVNMQQIHLIKKFIK Consensus (5968) EASSLCFKVYYKG VTHESSSAVNMQQIHLIKKFIK Section 155  (6007) 6007 6020 6030 6045  avian infectious bronchitis pol 1ab (5372) RFKQRESIT SELEMMQRAY MULLINGER CONSENSUS (6007) ANPSWSKAVFISPYNSQNYVAKRVLEQUTOTOTICAC SECTION FOR A CONSENSUS (6007) ANPSWSKAVFISPYNSQNYVAKRVLEQUTOTOTICAC SECTION FOR A CONSENSUS (6007) ANPSWSKAVFISPYNSQNYVAKRVLEQUTOTOTICAC SECTION FOR A CONSENSUS (6007) ANPSWSKAVFISPYNSQNYVAKRVLEQUTOTOTICAC SECTION FOR A CONSENSUS (6007) ANPSWSKAVFISPYNSQNYVAKRVLEQUTOTOTICAC SECTION FOR A CONSENSUS (6007) ANPSWSKAVFISPYNSQNYVAKRVLEQUTOTOTICAC SECTION FOR A CONSENSUS (6007) ANPSWSKAVFISPYNSQNYVAKRVLEQUTOTOTICAC SECTION FOR A CONSENSUS (6007) ANPSWSKAVFISPYNSQNYVAKRVLEQUTOTOTICAC SECTION FOR A CONSENSUS (6007) ANPSWSKAVFISPYNSQNYVAKRVLEQUTOTOTICAC SECTION FOR A CONSENSUS (6007) ANPSWSKAVFISPYNSQNYVAKRVLEQUTOTOTICAC SECTION FOR A CONSENSUS (6007) ANPSWSKAVFISPYNSQNYVAKRVLEGUTOTOTOTICAC SECTION FOR A CONSENSUS (6007) ANPSWSKAVFISPYNSQNYVAKRVLEGUTOTOTOTOR CONSENSUS (6007) ANPSWSKAVFISPYNSQNYVAKRVLEGUTOTOTOR CONSENSUS (6007) ANPSWSKAVFISPYNSQNYVAKRVLEGUTOTOTOR CONSENSUS (6007) AND CONSENSUS (6007) AND CONSENSUS (6007) ANPSWSKAVFISPYNSQNYVAKRVLEGUTOTOTOR CONSENSUS (6007) AND CO	Turnan corona zzac por tab (3304)	- 湖(1) 松重 B(天) K(日	I METAL TERM	THE WEST OF THE	MIREST DIX HENDERS
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Murine hepatitis pol 1ab (5885) AMPSWSNIVITALL SQNYVAR VISTOR AGGSE  Consensus (6007) ANPSWSKAVFISPYNSQNYVAKRVLGLQTQTVDSAQGSE  Section 156  (6046) 6046 6060 6070 6084  avian infectious bronchitis pol 1ab (5411) LLYV ECVTADSQFALDINGENALIZOR RITLLVVISROR bovine coronavirus pol 1ab (5837) LDY TYSQ AETA SVEVENTING TOTAL KGTECT SDR  Human corona 229E pol 1ab (5537) TDY TFAQTSDTAGACHANET WASTERAKGTLOVISSM  Murine hepatitis pol 1ab (5924) YOFYLYSQTAETALSVIVATIVACT FARKGTLOVISSM	Human corona 229E pol 1ab (5498)	KWSTWSK	WPT-SPVISS		
Consensus (6007) ANPSWSKAVFISPYNSQNYVAKRVLGLQTQTVDSAQGSE Section 156  (6046) 6046 6060 6070 6084  avian infectious bronchitis pol 1ab (5411) 4444 ECVTADSQEAEHINTENVALORY ROLLVVMROR bovine coronavirus pol 1ab (5837) 2644 YSQ AETAUSVEVICTNULTPARKCTLCVMSNM  Human corona 229E pol 1ab (5537) 7744 FAQTSDTAGACHAVETHVALTRALKGTFCT SDR  Murine hepatitis pol 1ab (5924) 30F414SQTAETAHSVIVATTNALTEAKGTDCVMSSM	Murine hepatitis pol 1ab (5885)	AMPSWSNS	ver en so	NVV. PERFET AM	
Section 156 (6046) 6046 6046 6060 6070 6084 avian infectious bronchitis pol 1ab (5411) ALYA ECVTADSQEALBINGERAL REGILOVEROR bovine coronavirus pol 1ab (5837) ALYA I YSQ ALTA I SVEVIN INVITEDRAL REGILOVESIM Human corona 229E pol 1ab (5537) ALYA I FRANCIS DTAGA CHARRET VALUE REGILOVESIM Murine hepatitis pol 1ab (5924) ACEVI YSQUALTAR SVIVALTERAR KOTOVESIM	Consensus (6007)	ANPSWSKA	VFISPYNSO	NYVAKRVLGLOT	TRANCER
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avian infectious bronchitis pol 1ab (5411)  LUXV_ECVTADSOFATHINGENALIZES ROULVVIEROR  bovine coronavirus pol 1ab (5837)  LUYVIYSO AETAUSVEVICTOVINITORIA ROULVVIEROR  Human corona 229E pol 1ab (5537)  TYVITFAOTS DTAGACNANE THARTER ROULVINISM  Murine hepatitis pol 1ab (5924)  MUSTALIA SVIVINITORIA REKETTOVINISM	(6046)	6046	.6060	6070	
bovine coronavirus pol 1ab (5837) IDV LYSO FARTALSVUVINTEN LEPERKETLEVESIM Human corona 229E pol 1ab (5537) IDVITEAQTSDTACACHARETH VATERALKETECTISDR Murine hepatitis pol 1ab (5924) YOF LYSOTARTALSVIVIOTERICATI PARKETTEVISSM	avian infectious bronchitis pol 1ab (5411)	SOVO SECV	TANGOUNTE	This looks to Torresser,	The state of the s
widthe nepaills politad (9924) 常愿管理文SOTAETAESX证文的管理和选择证证AFX依信市在CV信息EM	bovine coronavirus pol 1ab (5837)	YUYVIYSO	APTAUSTN		A THE C VIEW
widthe nepaills politad (9924) 常愿管理文SOTAETAESX证文的管理和选择证证AFX依信市在CV信息EM	Human corona 229E pol 1ab (5537)	KILYVITAO	TSDTAGACH	ANDTHWATERA	ZETECTMEND
Consensus (6046) YDYVIFSOTADTAHAVNVNRFNVATTRAKKETT CUMCHB	Murine hepatitis pol 1ab (5924)	YOFYIYSO	TAETALSVI	Victorial Control of the Control	KGTTGVNSEM
	Consensus (6046)	YDYVIFSO	TADTAHAVN	VNRFNVATTRAKI	KGTLCVMSND

Branch Control of the						Section 157
(6085)	6085	6090	6	100	6110	6123
avian infectious bronchitis pol 1ab (5450)	DELY	SALKFI	ELDSET	S	LQGTGER	HIUNKEPS
povine coronavirus poi 1ab (58/6)	OLEE	ALOFTT	TTTDKV	POAVET	PRIZOCOMME	PREZEVE
numan corona 229E por 1ab (55/6)	THE RUD	ALKEFF	THE WET THE	/\`	. or oo aciiii	THE PERSON NAMED IN THE
Murine hepatitis pol 1ab (5963)	QL PP	SINFTI	PLDDKI	NN	PRLOCTINGS	D SRSYV
Consensus (6085)	QLFE.	ALNETT	TITLDKI	N	RLQCSTNLF	
(0.40)	0404					Section 158
(6124) avian infectious bronchitis pol 1ab (5482) bovine coronavirus pol 1ab (5915)	6124	6130	27 89	6140	6150	6162
hoving coronavirus not tab (5462)	GVH2	AYAVTT	KALAAT	YEVNDE	MINALVNVEA	GSETTER
addition of the first for the for the	37 1 1 2 2 2		LAVIDIN	美国的 经有品级的	Market Market Strate Control	
Human corona 229E pol 1ab (5609)	DIES		TAUSUR	t k i 3 G L	)LENQIGNIN	VCEDEH
Murine hepatitis pol 1ab (5999) Consensus (6124)	CAND	THORDER TO DO D	ENT LOOK	XXXGGL	HAYCUNVAD:	S-AVCTISE
	O 4 21 4 4	IMALDE	DALIDDA	IVADGE		
(6163)	6163	6170		6180	6190	Section 159 6201
avian infectious bronchitis pol 1ab (5521)	a 230 G a Fr	MANAG	Warting C	CINTER TOTAL	CHANGE OF THE PARTY OF THE PART	THE THE LEWIS COME
bovine coronavirus pol 1ab (5953) Human corona 229E pol 1ab (5646)	LISE	458 KLD	VTGDEV	CKTST	KERSUKBUS	A CANAL DAY
Human corona 229E pol 1ab (5646)	VIEY	OSERED	VSMPGS	HSL-C	ROPAMBU	2 (T. 2'M T T
mume nepaulis por rap (0037)	THE PARTY OF THE	THEKLD	LTLDEY	CKIETT	RDF TKRULT	THE TOTAL
Consensus (6163)	LISL	<b>IGFKL</b> D	VTLDGY	HKLFIT	RDEALKRVR	AWVGFDVE
				· · · · · · · · · · · · · · · · · · ·		Section 160
(6202)	6202	621	0	6220	6230	6240
avian infectious bronchitis pol 1ab (5560)	ATHAC	CGT NIII	TNLEFQ	Versig	ALTVIPEGI	VDTSIGN
povine coronavirus poi 1ab (5992)	CATAT	RDSTE	TURBIA	TANK COMP	TO A SECURE A MINEY	TOTAL TANK TANKE
Human corona 229E pol 1ab (5685)	GAH VI	IGDNVC	INVELE	ve es ne	VERMAQEESC	CYLTNTGS
mutine tiehanis hot tap (onto)	WHAT	RDSIG	THEFTO		THEATTEN	FAFRDOV
Consensus (6202)	GAHAT	RDSIG	TNE PLQ1	LGFSTG	IDFVVEPTGI	LVATRDGY
(62/11)	6244	C.	nen	0000		Section 161
(6241) avian infectious bronchitis pol 1ab (5599)	NEEDT	O.		DZOU		6279
DOVING COMBINING OF TAN INTERN	SCHOOL T	Tropiete and	The state of the state of	THE PERSON OF TH	Philipping Total and the Street Street Street	Co. and the service of the service o
Human corona 229E pol 1ab (5724)	WVKPI	RARES		3 1 4 2 5 4 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5	TROOK OF VI	(FE LAZEII
Murine hepatitis pol 1ab (6115)	VEKKA	AARAT		TTDMM	CDCORPOWE	Vices, Mar
Consensus (6241)	VFKPV	AKAP	PGEOFKI	ARSA FINITE	SECOBMUANT	NATURE SERVICES
				*******		Section 162
(6280)	6280	j	6290	.630	10	0045
avian infectious bronchitis pol 1ab (5638)	ADNEC	NVSUC	of or electrical	Henied	A TOTAL PARTY	EFOUND
numan corona 229E por 1ab (5/63)	APFIDA	GSSIV	LEFFULWA	IGGLET.	TIPMENATION	- AVKHOO
Monte nehants hot tab (0104)	SUHLA	ULADS		LAS FRIE	TOTAL	REMAINS
Consensus (6280)	ADHLA	DLSDC	VVLVTWA	AGLEL	TTLRYFVKIG	REV CCV

The second secon			****	Section 163
(6319)	6319	6330	,6340	6357
avian infectious bronchitis pol 1ab (5676)	CGSRETE	H.S.HTQATATW)	KECLGP//FVYM	Islav la Lolophic
bovine coronavirus pol 1ab (6109)	OTKRATAY	MERTGYAGEW	RHSVITCOYLY.N	TLIVE COOK
Human corona 229E pol 1ab (5801)	GTVATCY	MSVSIND+C6F1	<b>CHATECTAN</b>	PYVIDEOGYC
Murine hepatitis pol 1ab (6193)	MIKRMEL	he kilgavegemi	RIESYSCLYLED	SELEVILLEDONG
Consensus (6319)	CTKRATCE	NSRTGYYGCWI	KHSLGCDYLYN	
(6250)	COCO	0070		Section 164
(6358) avian infectious bronchitis pol 1ab (5715)	0308	6370	6380	6396
bovine coronavirus pol 1ab (6148)	A STANFACE	ENDLHONE GHA	$\mathbf{v}_{i}^{\mathrm{M}}$ , $\mathbf{v}_{i}^{\mathrm{M}}$ , $\mathbf{v}_{i}^{\mathrm{M}}$	HUMAINNAIG
Human corona 229E pol 1ab (5840)				RC F VYDC#C
Murine hepatitis pol 1ab (6232)	Arrie Tre	HUDTE OF THE		hairay y Deli V
Consensus (6358)	YTGSLSSN	HDLICSVHKC	HUACCDATMO	PCI ANY DCEC
			* THANDODATELL	— Section 165
(6397)	6397	.6410	6420	6435
avian infectious bronchitis pol 1ab (5754)	QDVNWDLT	THURNE TO PERSON	TOBATIVALIANO.	Mark alter - FF
bovine coronavirus pol 1ab (6187) Human corona 229E pol 1ab (5879)	NNINWNVE	TITES DESI	USGEVLORVM	LKLAMTONRY
Human corona 229E pol 1ab (5879)	KNVDESIT	LEMIA : ENAI!	KGG TV SHI	MRAATKLYNP
Minime trebantis bot 190 (627.1)	KSVNNNLE	VPIISHIVSV	M'SCRET ORVM	FRA:DMTCNRV
Consensus (6397)	KNVNWNLT	YPIIANELSIN	TSCRLLQRVM	LRAAMLCNRY
A.A. A. M. A.A. A. M. A. A. A. A. A. A. A. A. A. A. A. A. A.				— Section 166
(6436)	6436	6450	6460	6474
avian infectious bronchitis pol 1ab (5793)	NWVYDIGN	EKGI-KCVRR	DVNEREIDKN	PIVRNVIQFE
bovine coronavirus pol 1ab (6226)	THUY	ENATACVE	DEDEKENDAO	TVKSVETLL
Human corona 229E pol 1ab (5918)	KAIHTIT	FEGIRCAVI	DAKWACABKW	LNSNETLE
Murine hepatitis pol 1ab (6310) Consensus (6436)	VCYDIGN	MAGPACAR	GYDEKENDAS	VVKSHLQFV
001,001.000 (0100)	VCIDIGM:	FK AIACVE	DFDFKFYDKNI	- Section 167
(6475)	6475 ,6480	.6490		
avian infectious bronchitis pol 1ab (5831)	Whyn OE kibi	K DA EVER GAMESIS	6500	6513
bovine coronavirus pol 1ab (6262)	SPEALKD	SEKIMATANZA	E SAMONETHIA	YEAR THE NAME OF
numan corona 229E ppi Tap (5955)	THYMTHE -	- OM REAR BOOK TO BOOK	CALLATINATES IN THE PART	monde and the the same of the western the
Murine hepatitis pol 1ab (6346)	YKYEA KO	OFLIGHTON WA	HANDKARANA!	7776 - 17607
Consensus (6475)	YDYEAHKD	FLDGLCMFWN	CNVDKYPDNA	VCRFDTRVI.
				— Section 168
(6514)	6514 ,6520	0 ,6530	6540	CEEO
avian infectious bronchitis pol 1ab (5870)	SVFNLEUCI	Causa Til Vincia	TVUDKEDDIC	TENED TO STEVE
bovine coronavirus pol 1ab (6301)	NNLLERCC	IGSSILY WIKHA	FHIKEESRAA	EHTEPMEKE
bovine coronavirus pol (ab (6301) Human corona 229E pol (1ab (5992)	STEDDEEV	esiste viinitä	THTPAYDKRAD	IAKI APAPE
Murine nepatitis por 180 (6365)	MKTHTBGGI	VGGSLYVNKHA	MITSPETRAAF	R NIT P M I LES
Consensus (6514)	S LNLPGC	NGGSLYVNKHA	FHTPPFDRAAE	FENTKPMPFF

		20-48-4-M-M-100000000000000000000000000000000	····	Se	ection 169
(6553)	6553	6560	6570	6580	6591
avian infectious bronchitis pol 1ab (5909)	FIDSFF	ETTQVDGV2	Q-DLVSLA	PKDUITKE	TELLUI.
bovine coronavirus pol 1ab (6340)	YISDTP	VYMDGMDA	CONDYVELK:	SATCLIROR	TENANC
Human corona 229E pol 1ab (6031)	YEDDGS	EVWHDQVN-	YYPIR	AT NOT Y KAR	TGGATC
Murine hepatitis pol 1ab (6424)	M SDTP	VYMEGMESI	(OVDYMPER:	SATUTTRE	Lesino
Consensus (6553)	YYSDTPC	VYMDGMDAI	KQVDYVPLR:		
				Se	ection 170
(6592)	6592	6600	,6610	6620	6630
avian infectious bronchitis pol 1ab (5947)	KKHAQM	AEPVT \$ 217	ANTER ELEVATION	VTNKLNP	LILIWKS:
bovine coronavirus pol 1ab (6379)	DAMAGES	REYLESTAD	Carric eten	"VYKTEDE"	NEWNER
Human corona 229E poi 1ab (6066)	SHAML	RAYVE	[F型O高面形的Ti	PTERDCY	THO THE
Murine hepatitis pol 1ab (6463)	DEMANE	REYLESIN	CAUTAGETE	IVYKTEDEA	HUVNTH
Consensus (6592)	LKHAEEY	REYLESYNT	PATTAGETFU	VVYKTFDFY	NLWNTF
		· · · · · · · · · · · · · · · · · · ·		S	ection 171
(6631)		6640	6650		6669
avian infectious bronchitis pol 1ab (5986)	SATIDE	IDUITAYUM	(KGGHYDAI)	ASUMBTVUI	'GĎí÷iEV
bovine coronavirus pol 1ab (6418)	TKT	TEN ANALIA	KTEHYTGQ	RGEMECATI	NDKVVA
Human corona 229E pol 1ab (6105)	T. REC	LEN IAFIV	NKOSEVGA	DUBLEVATS	GDiVEV
Murine hepatitis pol 1ab (6502)	Asset 182	DEHYYYUDY	NACHEDGRA	YG RILE CAYE	GERVIA
Consensus (6631)	TKL QS	ELENIVYNL	NAGHFDG A		
					ection 172
(6670) avian infectious bronchitis pol 1ab (6023)	6670	6680	6690	money articles begg of the season	6708
avian infectious bronchitis pol 1ab (6023)	IDOGVER	CAVEVROTEI	gras symplant	(BERNIRTL	INNRIL
bovine coronavirus pol 1ab (6455)	KIDKEDA	IN TEIT HIN GIRT	ZZNV:VELI	MCCSIBHH	PERKEE
Human corona 229E pol 1ab (6144)	RDGNTDN	IIV PVIIK ISI	##NT%FETTI	MARKVGLT	PLSEL
Murine hepatitis pol 1ab (6539)	KHONEDY	WALKNINE	'aun Vayaal	PARPSIRPH	FEIKLE
Consensus (6670)	KIQNEDV	VVFVNNTTI	LPTNVAVELI		
(0.00)	,			Se	ection 173
(6709)		6720	6730	TO THE STATE OF THE PROPERTY OF THE PARTY OF	6747
avian infectious bronchitis pol 1ab (6062)	KGLGVDV	MNGFATAR	ANOTBLYRI	I VK CAR	DIEP
bovine coronavirus pol 1ab (6494)	RNLNIDV	CWKHVIND	ARESIFCS	11.XIGD CMEE	DIKETD
Human corona 229E pol 1ab (6183)	KNUGYVA	TXKE TIME	EABRELTSI	WKSWJGWI	一一卫克AE
Murine hepatitis pol 1ab (6578)	KNENTDA	CMSHATMI	AKDSVFCS	SITYKYLCKY	DIQCIE
Consensus (6709)	KMTNTDA	TWEHATMD	AKESPLCSI		
107401	6740	~~~			ection 174
(6748)		6760	677(		6786
avian infectious bronchitis pol 1ab (6099)	MATMATA	DUKATEDAÖS	FILAADNAVI	JVSTQCYNR	YSYVEI
bovine coronavirus pol 1ab (6533)	VENATION OF	CKLINGALEA	AT KRANNG T	TSTTKVKS	LSMIKG
Human corona 229E pol 1ab (6220)	DIAC LOXE	WAT TO ESTER	CETT LET WAY	LESATAVET	GGKS
Murine hepatitis pol 1ab (6617) Consensus (6748)	PHNAME	AKOWAWIRL	TAKCRAGA	CTMLLKTYS	TRMTKG

				- Section 175
(6787)		,6800	6810	6825
avian infectious bronchitis pol 1ab (6138)	PSNLLYQNGMP	LKDCAN		LYVYKRVN-
bovine coronavirus pol 1ab (6572)	PERAFINGVVV	DKVGDTDCVi	FYFAVRKEGO	DVIFSOFDS
numan corona 229E poi 1ab (6257)	TURATERRORGAN	NCNDTAMART	TO THE TANK THE PARTY OF THE PARTY.	to The taken to be to de
iviunne nepatitis poi 1ab (6656)	PORADLNGVVV	EKVGDSDVE	WEAVERDED	DVTFSPTCS
Consensus (6787)	PPRADLNGVMV	DKVGDSDV H	FWFAVRKDGN	DVIFSR DS
AL AND THE RESERVE AND THE RES				- Section 176
(6826)		6840	6850	6864
avian infectious bronchitis pol 1ab (6163)	1/15 - 1/17/17/17		GAFVTLPN	TINENGASY
bovine coronavirus pol 1ab (6611)	<b>LRVSSNQSPQG</b>	NLGSNEPGNI	GGNDALATS!	TIE DSRVI
ficinali cololia zzac pol (ab (ozao)	K PW DHADG			- PYTHOD NIT
Murine hepatitis pol 1ab (6695)	LEPSHYRSPOG	NPGGNRVGDI	SGNEALARG!	PIET SELL
Consensus (6826)	L VSHY SPQG	NGN GI		TIFTQSRLL
The state of the s				- Section 177
(6865)	<u>6865</u> <u>6870</u>	6880	6890	6903
avian infectious bronchitis pol 1ab (6180)	ETTER SDIER	LLIAMSEESF	VER G-KEL	glontika:
COMING COLORIAVITUS DOLLAD INDICIT	THE PARTY OF THE P	ARCHAR TO PROPERTY TANKS IN THE IS	THE PARTY OF THE PROPERTY OF THE PARTY OF TH	The state of the s
ridinali colona zzac pol tab (0312)	QUELPESTMEE	DECINMENT GWE	TORMOTERA	MERCHATT
iviunne nepatitis poi 1ab (6/34)	SSITPRSEMER	DEMDLDDDVF	TAKKSHOWN	APPLIANTES
Consensus (6865)	SSFTPRSDMEK	DELALDDDVE	IOKAGTEDAY	AFEHIVYGD
***************************************				Section 178
(6904)	6904 .6910	6920	6930	Section 178
(6904) avian infectious bronchitis pol 1ab (6218)	6904 6910	6920	6930	Section 178 6942
(6904) avian infectious bronchitis pol 1ab (6218) boyine coronavirus pol 1ab (6689)	6904 6910 VDKPQLKCLAT	6920 Vjemykllra	6930	Section 178 6942 NSDSDVMQN
(6904) avian infectious bronchitis pol 1ab (6218) bovine coronavirus pol 1ab (6689) Human corona 229E pol 1ab (6351)	6904 6910 VDKPQLKGLMT FNOKLIJE FAIL VSKTTE (1.11	6920 VIGMYLLLRA L'GLYTROOT	6930 MKÜNAKSVTI SNI VTOEEVI	Section 178 6942 NSPSDVMQN SVDSSTHSY
(6904) avian infectious bronchitis pol 1ab (6218) bovine coronavirus pol 1ab (6689) Human corona 229E pol 1ab (6351) Murine hepatitis pol 1ab (6773)	6904 6910 VDKPQLOCE/IT FNOKITE FAL VSKTTL & LTL FNOKITE CTHI	6920 VÍGMYNLLRA LÍGHY RÓOT ÍLÍSQVÍLSKM LÍGTARROOK	6930 NKI NAKSVTI SKLVIČE EVI IGI KAEBEVI	Section 178 6942 NSDSDVMQN SYDSSTHSV AASDITLKC
(6904) avian infectious bronchitis pol 1ab (6218) bovine coronavirus pol 1ab (6689) Human corona 229E pol 1ab (6351) Murine hepatitis pol 1ab (6773)	6904 6910 VDKPQLKGLMT FNOKLIJE FAIL VSKTTE (1.11	6920 VÍGMYNLLRA LÍGHY RÓOT ÍLÍSQVÍLSKM LÍGTARROOK	6930 NKI NAKSVTI SKLVIČE EVI IGI KAEBEVI	Section 178 6942 NSDSDVMQN SYDSSTHSY AASDITLKC TYDSSTHSY SYDSSTHSY
(6904) avian infectious bronchitis pol 1ab (6218) bovine coronavirus pol 1ab (6689) Human corona 229E pol 1ab (6351) Murine hepatitis pol 1ab (6773) Consensus (6904)	6904 6910 VIDK PQLOCLET FNOK I I GERAL VSKTTL & JAB FNOK I I GGLHI VNQKI I GGLHL	6920 VÍGMYLLLRA LÍGHY RÓOT LÍSQVÍLSKM LÍGHARROOK LIGLYRROO	6930 ANKINAKSVTI SULVIQEEVI IGII, KAEBEVI SULVIQEEVI SULVIQEEVI	- Section 178 6942 NSPSDVMQN STDSSTHSV AASDITLKC FYDSSTHSV SYDSSTHSY - Section 179
(6904) avian infectious bronchitis pol 1ab (6218) bovine coronavirus pol 1ab (6689) Human corona 229E pol 1ab (6351) Murine hepatitis pol 1ab (6773) Consensus (6904)	6904 6910 VDKPQLSCLET FNOKITE FAL VSKTTL & LU FNOKITEGLHT VNQKITGGLHT	6920 VÍGMYLLLRA LÍGLYFRÓOT ILSQVELSKM ITGLARROOK LIGLYRRQQ	6930 MKÜNAKSVTI SÜLVTÖEEVI IGI KAEEFVI SÜLVTÕEFVI SNLVTÕEFVI	- Section 178 6942 NSPSDVMQN STDSSTHSV AASDITLKC FYDSSTHSY SYDSSIHSY - Section 179
(6904) avian infectious bronchitis pol 1ab (6218) bovine coronavirus pol 1ab (6689) Human corona 229E pol 1ab (6351) Murine hepatitis pol 1ab (6773) Consensus (6904)  (6943) avian infectious bronchitis pol 1ab (6257)	6904 6910 VIDEPOLICATION TO THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF T	6920 VIGMYLLLRA LIGHY ROOT ILSQVILSKM LIGHYRROOK LIGHYRROO 6960	6930 ANKINAKSVII SULVIQEEVI GIIKAEEFVI SULVIQEFVI SULVIQEFVI	- Section 178 6942 NSDSDVMQN SYDSSTHSY AASDITLKC FYDSSTHSY SYDSSIHSY - Section 179 6981
avian infectious bronchitis pol 1ab (6218) bovine coronavirus pol 1ab (6689) Human corona 229E pol 1ab (6351) Murine hepatitis pol 1ab (6773) Consensus (6904)  (6943) avian infectious bronchitis pol 1ab (6257) bovine coronavirus pol 1ab (6728)	6904 6910 VDKPQLCLLT FNQKITESTHE VSKTTL THE FNQKITESTHE VNQKITESTHE 0943 6950 YFVLSDNG-SY	6920 VIGMYHLLRA LIGHY ROOT ILSQVILSKM ITGTARROOK LIGHYRRQQ 6960	6930 ANKENAKSVTE SULVTOE EVI GIIKAE EFVI SULVIQE FVI SULVIQE FVI 6970	Section 178 6942 NSDSDVMQN SYDSSTHSY AASDITLKC FYDSSTHSY SYDSSTHSY SYDSSIHSY Section 179 6981
avian infectious bronchitis pol 1ab (6218) bovine coronavirus pol 1ab (6689) Human corona 229E pol 1ab (6351) Murine hepatitis pol 1ab (6773) Consensus (6904)  (6943) avian infectious bronchitis pol 1ab (6257) bovine coronavirus pol 1ab (6728) Human corona 229E pol 1ab (6390)	6904 6910 VIDER POLICIONE FNOR LIVE FAIL VISET LATE FNOR LIVE FAIL VISET LATE VINOR LIGGLEL 6943 6950 VEVLSDIG SY FITDERS G-GS CTMTYLIDES	6920 VIGMYLLLRA LIGHY RÖQT LISQVILSKM LIGHARROOK LIGHYRROO 6960 KOLGIVVILL	6930 ANKINAKSVTI SULVIQEEVI GILKAEEFVI SULVIQEFVI SNLVIQEFVI 6970 CITTELLER	- Section 178 6942 NSPSDYMON SYDSSTHSY AASDITLKC FYDSSTHSY SYDSSIHSY - Section 179 6981 MILKEYGTN SLNLINGVS
(6904) avian infectious bronchitis pol 1ab (6218) bovine coronavirus pol 1ab (6689) Human corona 229E pol 1ab (6351) Murine hepatitis pol 1ab (6773) Consensus (6904)  (6943) avian infectious bronchitis pol 1ab (6257) bovine coronavirus pol 1ab (6728) Human corona 229E pol 1ab (6390) Murine hepatitis pol 1ab (6812)	6904 6910 VIDEPOLICITATION TO VIDE POLICITATION TO THE POLICITATION OF THE POLICITATIO	6920 VIGMYLLLRA LIGHY ROOT LISQVILSKM LIGHAROOK LIGLYRROO  6960 KONGIYVILL STOLEVILLE LYMSE	6930 ANKINAKSVTI SULVIQEEVI IGII, KAEEFVI SULVIQEFVI SULVIQEFVI 6970 TITTFHELLRI LOTTVALVKE	- Section 178 6942 NSDSDVMQN SVDSSTHSY AASDITLKC PYDSSTHSY SYDSSIHSY - Section 179 6981 NILKEYGTN SLNINCVS-
(6904) avian infectious bronchitis pol 1ab (6218) bovine coronavirus pol 1ab (6689) Human corona 229E pol 1ab (6351) Murine hepatitis pol 1ab (6773) Consensus (6904)  (6943) avian infectious bronchitis pol 1ab (6257) bovine coronavirus pol 1ab (6728) Human corona 229E pol 1ab (6390) Murine hepatitis pol 1ab (6812)	6904 6910 VIDER POLICIONE FNOR LIVE FAIL VISET LATE FNOR LIVE FAIL VISET LATE VINOR LIGGLEL 6943 6950 VEVLSDIG SY FITDERS G-GS CTMTYLIDES	6920 VIGMYLLLRA LIGHY ROOT LISQVILSKM LIGHAROOK LIGLYRROO  6960 KONGIYVILL STOLEVILLE LYMSE	6930  NKÜNAKSVII SNI VI OE EVI IGII, KAEE EVI SNI VI QE F VI SNI VI QE F VI 6970 LIID FIELLEN LIE OEVALVKE LIE SV DI VKS LDD FVELLKS	- Section 178 6942 NSDSDVMQN SYDSSTHSY AASDITLKC LYDSSTHSY SYDSSIHSY 6981 NELKEYGTN SININCVS LNIKCVS SLNIKCVS
(6904) avian infectious bronchitis pol 1ab (6218) bovine coronavirus pol 1ab (6689) Human corona 229E pol 1ab (6351) Murine hepatitis pol 1ab (6773) Consensus (6904)  (6943) avian infectious bronchitis pol 1ab (6257) bovine coronavirus pol 1ab (6728) Human corona 229E pol 1ab (6390) Murine hepatitis pol 1ab (6812) Consensus (6943)	6904 6910 VDKPQLECENT FNOKTIE FAIL VSKTTLETTU FNOKTICGTHT VNQKIIGGLHL  6943 6950 YFVLSDNG-SY ELTDEKSG-GS CTMTYLNDPSS FITDENSG-SS FIVDE SG SS	6920 VIGMY LLRA LIGHY ROOT LISQVILSKM LIGHARROOK LIGHYRROO  6960 KOVOTVILI SVOTVILL KSVOTVIDLL	6930 ANKINAKSVII SULVIQEEVI GILKAEEFVI SULVIQEFVI SULVIQEFVI SULVIQEFVI 6970 THUFFIELLEN LUCKELLEN LUCKELLEN LUCKELLEN LUCKELLEN LUCKELLEN LUCKELLEN LUCKELLEN LUCKELLEN	- Section 178 6942 NS DS DVMQN SY DS STHSY AASDITLKC FY DS STHSY SY DS STHSY - Section 179 6981 MALKEYGTN SLNINGVS SLNIKCVS SLNIKCVS SLNIKCVS SLNIKCVS SLNIKCVS SLNIKCVS SLNIKCVS
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A STATE OF THE STA			TOTAL CONTRACTOR OF THE PARTY O	Section 181
(7021)	7021	,7030	,7040	7059
avian infectious bronchitis pol 1ab (6332)	CGENTRED	YWVQNCVM	PCNIPULVGII	SFILMIVA
bovine coronavirus pol 1ab (6802)	PURSUAVI	YXXINSPME	RVSTWINGERPUT	T.PTCCMMALKA
Human corona 229E pol 1ab (6464)	CSESMIGE	FORMCL	PCNLYILGAGLE	TESSTAFIUV
Human corona 229E pol 1ab (6464) Murine hepatitis pol 1ab (6886)	PENVITVL	YLESPLIN	RVNLWUFCKPII	LITT CMMTT Z
Consensus (7021)	PGYSMPVL	YKYQNSPLE	RVNLWNYGKPIT	LPSGIMMNVA
A STATE OF THE STA	***************************************	· · · · · · · · · · · · · · · · · · ·		Section 182
(7060) avian infectious bronchitis pol 1ab (6371)	7060	,7070	,7080	7098
avian infectious bronchitis pol 1ab (6371)		LSKIPLICAL	Haritazmhegagi	DKGTPSST
bovine coronavirus pol 1ab (6841)	RY 1946 AX	LNTTTLAYE	Vivere Libraria	EKCVEFOSAV
Human corona 229E pol 1ab (6503)		FNSJULCAL	HKYSIKWELLEGACS	DYCUAPUTAN
Murine hepatitis pol 1ab (6925)	stribleog	LSP70Harb.	AUSBVIJUSAS	DKSVÄZESAV
Consensus (7060)	KYTQLCQY	LSTTTLCVP	HNMRVLHLGAGS	DKGVAPGSAV
And the state of t				—— Section 183
(7099)		7110	7120	7137
avian infectious bronchitis pol 1ab (6410)	IKOMERES	TITITETY	DYCSTAHVSVLS	DNKYNTEHK
bovine coronavirus pol 1ab (6880)	LROWLPAG	TITUDULLY	PEVELSVATYFO	DCITIPEDCO
bovine coronavirus pol 1ab (6880) Human corona 229E pol 1ab (6542)	KRALEHD	ATVVIJITVV	DYTEADFSVIC	DEATMYLEDK
Murine hepatitis pol 1ab (6964)	ROULPAG	STILEPADVN	PF%JDSVASYYC	NCITLEFOCO
Consensus (7099)	LKQWLPAG	TILVDNDVV	PFVSDAVASYFO	
				Section 184
(7138)	7138	,7150	7160	7176
avian infectious bronchitis pol 1ab (6449)	FLIVERAL	TDNDSKRK	HEGHIANNGNDD	VIIIISFLR
bovine coronavirus pol 1ab (6919)	Whi I was als	LOPETKNIS	evnisklic	FITTICHMIR
Human corona 229E pol 1ab (6581)	FP4LISTE	YDGRTKAID	GENNSKEG	FETTINGFIC
Murine hepatitis pol 1ab (7003)				of the parties, I will replace the said
Consensus (7138)	FDLIISDM	ADBILKNIG)	EYNVSK DG	FFTYICHFIR
A transfer of the second secon				Section 185
(7177)	7177	7190	7200	7215
avian infectious bronchitis pol 1ab (6488)	NNEAL	FINV KVERTA	HEVEODIAQDO	'AWWIMFCRAY
bovine coronavirus pol 1ab (6954)	DKPCTG63	V 531 L 1 2 7 E 7	»NAELSKUMGYE	AEHINFAINA
Human corona 229E pol 1ab (6616)	E K MALLEL S		WINKKLIZETNOKE	SEW MILTSW
Murine hepatitis pol 1ab (7038)	UNIMIES	VALUATION	MNVETADTWOKE	A F M H T T T T N V
Consensus (7 177)	DKLALGGS	VAIKITEES	MNYETIDTWÖKE	Section 186
(7046)	7046	7000	70.40	
(7216) avian infectious bronchitis pol 1ab (6527) bovine coronavirus pol 1ab (6993)	7210 334344444444	7230	/240	7254
avian mectious pronchius por rab (6027)		TT 711746-	ASEKYKYSEKTI	AND A PROPERTY.
Human corona 220E not 4ab (6555)	MALID SINGE		-KIRKABI EDEN AN	INCAPICALE WARKS
Human corona 229E pol 1ab (6655)				
Murine hepatitis pol 1ab (7077)			K KVEIDGNTM	
Consensus (1210)	MAGGGERE	TITATMITTO	W WAUTDONLE	IDMNITTEMENT

4	· · · · · ·				Section 187
(7255)	7255	7260	,7270	,7280	7293
avian infectious bronchitis pol 1ab (6565)	NYL	OTSAYT	FUVARUDLRLKA	TPUVNEK	TEOKT DL VFN
bovine coronavirus pol 1ab (7030)	TVW	NGGAYSTI	POMAKEPTKTAC	TANTIME	SYMMERTITA
Human corona 229E pol 1ab (6694)	TVM	SLSYNSV	LILSUENCKHKA	irvvvo k	DSDINEMELS
Human corona 229E pol 1ab (6694) Murine hepatitis pol 1ab (7114)	TMW	NGGAYOL	FUMSIT PUKAAC	TAVVSEK	PDOINDLE LE
Consensus (7255)	TVWI	NGSAYSL	FDMAKFPLKLKA	TAVVNLK	DQINDLVLS
					- Section 188
(7294)	7294	,7300		7319	
avian infectious bronchitis pol 1ab (6604)	DIK	CHELLINE	DVGNTSETSDSE	CTM SEQ	ID NO: 9905
bovine coronavirus pol 1ab (7069)	LLE	Kemitur.	DTNKEVEVGDSI	YNVI SEQ	ID NO: 9886
Human corona 229E pol 1ab (6733)	IVR	sie Wei viel	3 NGKCLSFSMH1	STK SEQ	ID NO: 9914
Murine hepatitis pol 1ab (7153)	İE	dā pilaive	DTRKEVEVGDSI	UNVK SEQ	ID NO: 9887
Consensus (7294)	LIE	KGKLLVR	DTGKEVFVSDSI	VNVK	

## FIGURE 4B

			*****		Section 1
	(1)	1	_,10	20	39
human coronavirus OC43 NP	(1)	MSFTPGKO	SSS-RASS	enrsene iik	-Wanospoven
Bovine corona NP	(1)	MSFTPGKO	SSS-RASE	GNRSGNETEK	-Wanoshasam
avian infectious bronchitis virus NP	(1)			MASEKAAG-	- KSING PND-
mouse hepatitis virus NP	(1)	MSHVEGOE	NAGGRSSS	VNRAGNC TEKKT	TWATOTTERCES
Consensus	(1)	MSFTPGKO	SSS RASS	GNRSGNGILK	WADQSDQARN
					Section 2
	(40)	40	50	60	
human coronavirus OC43 NP	(36)	VOTELBEZ	A D VINTA H &	AABECENTIE	78
Bovine corona NP	(36)	VOTREBRA		QQBSGGNVVPVY QLPSGGNVVPYY	SN#PPFINDE
avian infectious bronchitis virus NP	(16)	TINTAGER	D KACG GU	NA	DATE BATTATAK
mouse hepatitis virus NP	(40)	NAMERON	A SEA CONTRACTOR	Q-PNSCSVVPHY	PALACANA
Consensus	(40)	VOTEGREA	VDKVLVLC	2 PSGGNVVPYY	###########
	( )	· & z months	ZI UZIVI D	S ESGGMAAATI	
	(79)	70	00	400	Section 3
human coronavirus OC43 NP			90	100	117
Bovine corona NP	(75)	SALDERY	EAME TERM	VPATEAK SAWY	SHNRGSPARAD
avian infectious bronchitis virus NP	(/5)	SANTELA	NAME TO E	VPATEAK IT WY	FHNERSECTAD
mouse hepatitis virus NP	(78)	NAPAPKE	S S S WEIDINE I	NUKNSQQH: WR	KQABBEPGK
Consensus	(70)	Sporving	e Kenetani	epaséok i Y	RHNERSTIT PD
- Consensus	(10)	GREEFERE	GĞGA BI W B(	GVPASEQKGYWY	
	(118)	110	400	446	Section 4
human coronavirus OC43 NP	(110)	MANAGER	130 Karas Herricana	140	156
Bovine corona ND	(117)	MADALTA		rur HakboyaTD	LD-VYWAASNO
avian infectious bronchitis virus ND	(100)	PRORUDDE		GUPAKDQY TD	IDAVENVASNO
avian infectious bronchitis virus NP	(447)	COOKERPD		AND LNW GDS	QDSIVWAAKG
mouse hepatitis virus NP	(117)	CNOKOL L D		HHEGASYGDS:	IE SKEMMAN SQ
	(110)	GMÄKÄPP5	KMXFXXFGI	GPHAKDQYGTS	
	/ 4 mmy \	AFT	A 2000 A		Section 5
human paranavirus CC49 ND	(157)	10/	170	,180	195
human coronavirus OC43 NP	(103)	AHYNUPAD	LVDDDPSSE	Dealfare en en de la compa	TATAÖGAAI
DOVING COLORS NP	(103)	O VALPAD	LLDAUESSI	EATE PRIEFRI	TVL PQGYYI
avlan infectious bronchitis virus NP	(121)	# VKSRSN	2GTMPMDKE	DOAR THE SDEC	PDGNFRWDFIP
mouse hepatitis virus NP	(156)	SPINIRSD	IWEµµ₽SS⊩	IEAIRIENAPR—	TVIEQGEYV
Consensus	(157)	ADVNTRAD;	IVDRDPSSI	EAIPTRFPPG	TVLPQGFYI
Mark Mark Visit Mark V			**************************************		Section 6
	(196)	196	210	220	234
human coronavirus OC43 NP	(189)	EGSGRBAPI	ISRSTSRTS	SFASSAGSRSR7	NNSGNRTPTSG
Bovine corona NP (	(189)	PCSCPSADI	TODOTODAG	ELACCARCHONS	NATION OF STREET
avian infectious pronchitis virus NP (	(160)	LSREAGES	STAASSAAS	SEVPSR	FREDROR
mouse nepadus virus NP (	(192)	BGSGKSAP1	ASRSGBRSC	SEGPNNRARS	SSNOROPART
Consensus (	(196)	EGSGRSAPI	ISRSTSRAS	SRASSAGSRSRI	ANSGNRTPTSG

	T							- Section 7
(1	235)	235 24	0		250	26	0	273
human coronavirus OC43 NP (	228)	VTPUMAI	ATOC	SLVLA	KLGKD	ATKÝOO.	VerE Har	KEVROKT
Bovine corona NP (	228)	VTRUMAI	AIOC	SLVDA	KLGKD	ATKPOO	V TKOT	AKHTROKT
avian infectious bronchitis virus NP (	192)	AEDBLI	ARAR	KITOD	00	-RKGTR	rakor	AFAMAHRR
mouse hepatitis virus NP (	229)	VKELMAI	e i	ALVĪĀ	KLCKD	AGOPKA	varkos	KEVROKI
Consensus (	235)	VTPDMAI	DOIA	SLVLA	KLGKD	ATKPOO	$V \cap K \cap V$	AKEVRQKI
*		Williams.	***				* * *** * * *	— Section 8
ſ	274)	274 2	280		290		300	312
human coronavirus OC43 NP (	267)	TAIL DOG	6500	MKOGII	(4.A.4.A.B.			312
Bovine corona NP (	267)	TALLDRAI	, , , , , , , , , , , , , , , , , , ,	NEGOT		PELCEN		
avian infectious bronchitis virus NP (	2271	rcsi	- 15 BP 17	DDCVD	Turkeya.	AND MEN		COCKPLA
mouse hepatitis virus NP (	2681	THEODAL	2 10 15	N W W W D	THE A A	CIT OI NO	y P G MEN	
Consensus (	274)	TNYPENZ	AD CD	NECCE	22455	CONGEN	2	語及名戶指标於下
	44 T J	MMKEKQI	ARDE!	NAQCI	VQQCE.	GKKGPN	7 ME.	GGGEMLKL
*	2421	242	200	Marie Rose	000		0.40	— Section 9
buman paranguirus OCA2 ND (	313)		320	COMPLETE HER COMP	330	TROJENI STORES	340	351
human coronavirus OC43 NP (	204)	12122501	1 1 Tr	AHLA	PAGEF	PAGERT.	CLAKV	0N
Bovine corona NP (	204)	HISSIANI	h F T Tr	WELA.	TAGAE	$E = S \times R I I$	ETAKA	<b>2</b> М
avian infectious bronchitis virus NP (	202)	GIKUGK	/TAM	LNITE	SPHAC	L= Q (RV)	PPKLQ:	PDGLHLRF
mouse hepatitis virus NP (3	305)	THE WEST	OBAL,	AET/A?	TVGAR	<b>新国职制化</b> [1]	PAKK	
Consensus (	313)	GTSDPQE	PIL	AELAP	TAGAF	FFGSRL	ELAKV	
THE RESERVE OF THE PROPERTY OF		77						_ Section 10
(;	352)	352	,360	\$111- Tegerapers	370		380	390
human coronavirus OC43 NP (	337)	DSG	PDE	QKDV	WELRY	NGAIRFI	SELS	g pá tamký
Bovine corona NP (3	337)	bsg1	ILDE.	∈QK,°V	PELRY	NGAIREI	SELS	SEBTIMKV.
avian infectious bronchitis virus NP (	301)	EFTTVVE	RDD	POFIN	WKIC	DECVDGY	JGERPI	KDHVVRPK
mouse hepatitis virus NP (3	337)	sgc	ALE	PTKLW	YELQY	SGAVREI	STEP	SELTIMKV
Consensus (3	352)	LSGN	DE:	PQKDV	YELRY	NGAIRFI	STLS	GFETIMKV
A. v. d. l. de les constitues de la constitue					***************************************			Section 11
	391)		.40		A:	10		429
human coronavirus OC43 NP (3	373)	INENINZ	YOO	DOGMM	NMSAK	PORORGI	IKNGO.	GFNCIN
Bovine corona NP (3	373)	LNENLNE	Yoo	DDGMM	NMSTK	P. PORG(	rven.	OF NTIN
avian infectious bronchilis virus NP /:	340)	SR DARS	- 12 D	TOTO	Q DA DD	OCHORRE	THE CHECK TO	TO DESER
mouse hepatitis virus NP (3	372)	LNEITANZ	YOK	ogića d	VVSFR	POP-KGI	ROANI	KKUEVIN
Consensus (3	391)	LNENLNE	YOO	ODGMM	NMSPK	POROKG	KNGO	GENDN
		***	~ ~			- 22		- Section 12
· ·	430)	430	,	40		450		468
human coronavirus OC43 NP (4	400) 400)	Teveren	76°037	170 1201-216	TX TEVENTON	730 24474	e tera por	400 200
Bovine corona ND (	400) 400)	E G VEY V. D. F.	CORV	771.00	RULLA	phabhh	KKMDE	
Bovine corona NP (4	700)	LDV MARE	2.5 %	Source	KELLA		វីសភាកិត្តា	g
avian infectious bronchitis virus NP (3	440	MINKELL		< N 22	AQUEE	DIJEPKV.	INWGD	3A
mouse hepatitis virus NP (4	420	W S Y M K P K	es sur	がお が と 算 ム 済	KEELP	BURSLU	ACTIPDI	DGVVPDGL
Consensus (4	430)	ISVALPE	SRV	2QNKS	RELTA.	EDISLLE	KKMDDI	YT S
							*	- Section 13
(4	169)	469 474						
human coronavirus OC43 NP (4			SEQ	ID NO	9915	1		
Bovine corona NP (4					9887	•		
vian infectious bronchitis virus NP (4	10/1\	LOPHER SE			: 9906			
mouse hepatitis virus NP (4	1401				: 9898			
Consensus (4	160)	E DECEL						
Consensus (4	109)	PDISET						

## FIGURE 4C

						Section 1
	(1)	1	10	,20	,30	42
human coronavirus OC43 HE	(1)				TYN BETWEEN SHO	
bovine coronavirus HE					IDMPLTIM TESL	
mouse hepatitis virus HE					SPAE LEVINSEL	
Consensus	(1)	MFL	LPRFILV	SCIIGSLG	FENPPTNVVSHL	NGDWFLFG
						Section 2
	(43)		50	60	70	84
human coronavirus OC43 HE	(39)	MEER OCK	HIVNINP	HITSCHOL	ON THE POST OF THE PROPERTY OF	FACISITA
bovine coronavirus HE	(39)		HVVNTNB	RUSTIDI	TPATICIDALKIBIS	KAGNFIER
mouse hepatitis virus HE						THEK LEK
Consensus	(43)	DSRSDCN	HIVNINP	NYSYMDLI	NP LCDSGKISS	KAGNSIFR
	·				A Committee of the Comm	— Section 3
	(85)	85 ,90		100	.110	126
human coronavirus OC43 HE	(81)	EFFT16	KN XWQ H S	QUITFIEG	/ * i verha i / n i se i verta i verta i r	RSOSADIW
bovine coronavirus HE	(81)			QUILLE DE	LEENLEECHAS HET	TRUSSIDEN
mouse hepatitis virus HE	(85)		Charlen Sibre	SCHEENER	VITER FVEIL L	
Consensus	(85)	SFHFTDF	YNYTGEG	QQIIFYEG	VNETPYHAFKC	SGSNDIW
					. A. A. A. C. C. annual V. C. control bear or	Section 4
	(127)	127	1.	40	150	168
human coronavirus OC43 HE	(123)	HOMEGLE	ar gvern		PALVE EVER 65%	OSTALCES
bovine coronavirus HE mouse hepatitis virus HE	(123)	HONIGLE	TI VERN		NAME IN THE P	QSTALTUS
mouse nepatitis virus HE	(127)	MGREARM	MERIKO K	MAHMASUS	Vilkiels lands	GPVSMCKH
Consensus	(121)	MÖNKEPL	TIOVIKN	MAVYRSLT:	FVNVPYVYNGSA	
	(400)	400			* ^-	— Section 5
	(169)		,180	.19	0 200	210
human coronavirus OC43 HE bovine coronavirus HE	(165)	(G.8) (I)	V.BREERY	APOANSG		
DOVING CORONAVIRUS HE	(100)	(G) h	V P L P H A Y	TAKEANEG		
mouse hepatitis virus HE Consensus	(109)	LANGVI	Labraria z. F	LGKEVSKP	grane smanella	Verestin.
Consensus	(108)	GS T	ATMMEWI	IAKEAN G	DYYYKVEADFYL	Section 6
	maas	044	000	220	010	
human coronavirus OC43 HE	(211)		220	230	240	252
hoving parapovirus HE	(203)		K E TO MILK			
bovine coronavirus HE mouse hepatitis virus HE	(200)	THE TAX SE	n i w pin kin ov mese te t	Linkara Kali		ALLER TOP
Concensus Virus III	(211)	PICTPMC	K B T G N III K K B T G N III K	を	ENKDIGAIAEPI Prantiaepiepie	
Odliserisus	(411)	EMOTEMA	ALMONAN	TIDDDQII	ENVOIGATIGHM	Section 7
	/2E2\	၁၄၁	260	270	280	294
human caranavirus OC42 UE	(253)	203	200 2317 A.S. 253	2/U	200 	294 256 - 156 - 156 - 156 - 156 - 156 - 156 - 156 - 156 - 156 - 156 - 156 - 156 - 156 - 156 - 156 - 156 - 156 - 156
human coronavirus OC43 HE bovine coronavirus HE	(240) (245)	ESTAL NAS ITE	rvir po		up h == Traxa fallo	TO NO DO DO
mouse hepatitis virus HE	(252)	T. The mark T. V.	HAME BAN	Transmit.		
Concensis	(253)	FDINCHY	Mの数を「簡単 T.VT.DQCN	VI.ATCNET	LLTVPTKAICLN	KDKDEMEN.
Consonsus	()	* * * * * * * * * * * * * * * * * * *	*** ** *** ** *** ** *** ** *** *** **	THELDMEN.	CMT A E T KWT C TIA	TITITIFIELE

## FIGURE 4C (contd.)

							***************************************		Secti	on 8
(295)	295	300		,310	)		320			336
human coronavirus OC43 HE (287) bovine coronavirus HE (287)	ZWW	SRUNK	ARSS		ev.	CP2	1917 by	HSTIN	atvic vy	DIN
bovine coronavirus HE (287)	muvi	STUNK	ARGE	KMI	ÄVA	ij₽₽°.	(IX F.I	insurn	Y V C Mix	DIN
mouse hepatitis virus HE (295)	OWNE	MEMMA	Nhos	DOMI	SIM			UT SD	T. N. A. Y. Y.	ស្រុកព
Consensus (295)	QVVD	SRWNN	IARQS	DNMT	AVA	COPPY	CYF	RNSTTN	YVGVY	DIN
		Andrew Committee of the							Secti	ion 9
(337)	337			350		36	0			378
(337) human coronavirus OC43 HE (329)	Harr	G ME	Wadı	LINS	PEF	SQQG)	ALR YI	DIN FESTIVE	WPLYP	Z SR
hovine coronavirus HE (329)	HCD2	SIUS	LIS (AL)	I CO DE	PEE	5.000 S X	FEREI	DIV VIEW ON	W.P.Lax S	YCR
mouse hepatitis virus HE (337)	HIGH		HAGL	$\mathbf{M} \cdot \mathbf{N} \mathbf{V}$	r selli	AID OF	7年A数I	AMARABA	MEIGHE	31 EF
Consensus (337)	HGDA	GFTSI	LISGL	LYNS	PCF	SQQGT	/FRYI	DNVSSV	MBLAB	YGR
b					***************************************				— Section	n 10
(379)	379		390	*********		400		410		420
human coronavirus OC43 HE (371)	CPI	DINICAL	JPDLL	I C V 3	JOYL.	BW (FE	.cii.	esvani	THAY.	L L 2
hovine coronavirus HE (371)		D'N'	CPDV	IT V	DPE	PEWE	DETER	Levasi	THEVI	LLE
mouse hepatitis virus HE (379)	EP In	IVIVI	F-MA	Vi M	HOPI	PVIII	LVVII.	CAGIJANI	I mar Fu	MF
Consensus (379)	CPT	ADIN	PDLP	ICAZ	CDPL	PAIL	LGIL:	LGVAVI	IIVVI	LLY
									Section	on 11
(421)	421	Laurence de description ( ) , (197)	432							
human coronavirus OC43 HE (413)	FIN	NGT	THDA	~ £	ID NO					
bovine coronavirus HE (413)	1 4V	NUTK	HD%	~	ID NO		_			
and the second s	16. 15 change 14.	re _ File _ Italia	Control of the contro	SEQ	ID NO	J: 989	9			
mouse hepatitis virus HE (420) Consensus (421)	PAT	12 MARK		2-2			-			

### FIGURE 4D

				Section 1
•	(1) 1	,10	20	39
bovine coronavirus Sm	(1) MEMADA	YFADTVWYV	OTIFIVAICLL	VIIVVVAEEA
avian infectious bronchitis virus Sm	(1) MNLLNK	SIEENGSEL	PALYLIVGELAL	YLLGRALQARVQ
mouse hepatitis virus Sm	(1)MFNL	FLIDIVWYV	<u>Q</u> IJFEFAVCLM	VTIIVVAPLA
Consensus	(1) M M N	FL DTVWYV	GQIIFIVAICLL	VII IVVAFLA
The state of the s				Section 2
	(40) 40	,50	60	78
bovine coronavirus Sm	(38) TEKLCI	<b>QLCGMCNTL</b>	JLSPSTYVĚNRG	ROFYEEYN-DVK
avian infectious bronchitis virus Sm	(40) AADACC	LFWYTWVVI	PGAKGTAFVYKY	TYGRKLNIJPEDE
mouse hepatitis virus Sm	(36) SIKL I	ÖLCGLCNTL	/LSPSIYLYDRS	KOLYKYYNEEMR
Consensus	(40) S KLCI	QLCGLCNTL'	VLSPSIYLF R	KO AKŁAN ETK
				Section 3
	(79) 79	90		108
bovine coronavirus Sm	(76) PPVLDV	D.D.V		SEQ ID NO: 9889
avian infectious bronchitis virus Sm	(79) AVIVNE	FPKNGWNNK	NPANEQDAQRDE	LYS SEQ ID NO: 9907
mouse hepatitis virus Sm	(75) LELLEV	ppit		SEQ ID NO: 9900
Consensus	(79) PILDV	DDI		•

## FIGURE 4E

AND THE COLUMN TO THE COLUMN T						Section 1
	(1)	1	,10	,20	30	40
human coronavirus OC43 M	(1)	-MSSK	TTPAPVYIW	TAGEATKELITE	wnfsdgii.	CHILLET
bovine coronavirus M	(1)	-MSSV	TTPAPVYTW	TADEATKELKE	WELSIGIST	LFI VOI
avian infectious bronchitis virus M	(1)		MSNAANCTL	DCEOSVELFEE	YELFITAFE	LELTI
mouse hepatitis virus M	(1)	MISTI	QAPQPVYQW	VADEATRELE	wnfslgtb;	理的人は対土
Consensus	(1)	MSS	TTPAPVYTW	TADEAIKFLKE		
and the second s						Section 2
	(41)	41	50	60	70	80
human coronavirus OC43 M	(40)	LUF	TSE SMIT-VILV	TAMETT WINGS	ETULT BULLEN	VEAL
bovine coronavirus M	(40)	hQFE)	II SHUME VA V	工业为于工作的节成外等	TITTTTTTN	**ATT
avian infectious bronchifis virus M	(36)	HOYER	ANKSREIYI	MANAGERE	INTAVGV15	TIBLE
mouse hepatitis virus M	(41)	HERAD	EASTAILA LA	Victor A. I. S. A. M. I.	THE VICTORY	<b>经</b> 从数据证明
Consensus	(41)	LQFG	TSRSMFVYV	IKMIILWLMWE		Section 3
A STATE OF THE PROPERTY OF THE				400		120
	(81)	81	90	,100	,110	120
human coronavirus OC43 M	(80)	NVYLIC	FLS EVENT P	TIMWIVa FVNS		
bovine coronavirus M	(80)	NXX	SESTATE P	ILMWĪVIEVN CUSEEGYWIO	TATE KE GIPC	
avian infectious bronchitis virus M	(04)	TGGHY	/AAKILLEW. F	TIMMIN FIVE		
mouse hepatitis virus M	(01)	NVIDA	5 E-O IVE - IV	LIMWIVYFVNS	TOTETOTES	NWSFNP
Consensus	(01)	MAXTIC	PESTALITAN	TITMATATEAM	TKHE THIGO	Section 4
1	(121)	121	,130	.140	,150	160
human coronavirus OCA3 M	11201	b tracking	MOTHMROTA	IVVR PT TEDYHT	UNIVERSE	ILYTOGI
hovine coronavirus M	(120)	I TUN	MCEDMKGRI	AYVRPID DYH	LTVTTTRGI	ILYMOGI
bovine coronavirus M avian infectious bronchitis virus M	(116)	SNA	VGSTLUSNGO	OCKFAIRSVPN	MVLSPIIKNO	VLYCEG
mouse henatitis virus M	(121)	SELN	LMCTDMKGTN	VXXK5TT9-DXB:	TTTATEL ROL	f Trawing A
Consensus	(121)	ETNN	LMCIDMKGTI	YVRPIIEDYH:	PLTVTIIRGE	HLYMQGI
A STATE OF THE STA			<b></b>	and the same of th		Section 5
	(161)	161	,170	,180	.190	200
human caranavirus OC43 M	(160)	KT CT	CVSWADISHAC	YMITTAKWTHLE'	ľ×krgflór.	SDTSGE
bovine coronavirus M	(160)	KLGT	GYSLSDULA	everakyshiji.	LIKRGELDK.	GDTSGF
bovine coronavirus M avian infectious bronchitis virus M	(156)	QWLA	KCEPDH	DIF CPPDRRN	[: B	MV
mouse henatitis virus M	(161)	KTGT	GESLSDLIA	YVTVAKVSHLC:	LTKEMETIDE,	NDC A 2 P.T
Consensus	(161)	KLGT	GYSLSDLPA'	YVTVAKVSHLC	FYKRGFLDK:	r Drsgr
						Section 6
	(201)	201	210	220	231	TD MO. 001
human coronavirus OC43 M	(200	) AVVV	KSKVQNYRI	PSTOKESGMDT	Transfer Fred Fix and	) ID NO: 991 ) ID NO: 989
bovine coronavirus M	(200)	) avyv	KSKVGHYRL	PSTOKESGMDT		O ID NO: 983
avian infectious bronchitis virus M	(185	) OKMT	GDOSENKKR	FAT		) ID NO: 990
mouse hepatitis virus M	(201)	) AVIV	KSKVENYRL	PSN-KPSGMDT	ALLRI '	•
	. /^^1		TO OF TO TO TO AT TO TO TO	PSTQKGSGMDT	A. T. T. D MINET	

## FIGURE 4F

						Section 1
	(1)	1	,10	,20	,30	40
human coronavirus OC43 S	(1)	MFLILLUIS:	SPTAFA	VIGDIKCTSDN	-INDKDIGP	PPISTD
avianinfectiousbronchifisvirusS	(1)					
bovine coronavirus S	(1)			VIGDÍKCTTVS		
mouse hepatitis virus S				YIGDFRCIQLV		
Consensus	(1)	MFLILLIS	LPTAFA	VIGDLKCTSL	IND DTG	
And the Artist of the Artist o						<ul><li>Section 2</li></ul>
	(41)		50	60	.70	80
human coronavirus OC43 S	(40)	TYDYTNGL	G.T.Y.YVI.	DRVYINTTLF		
avianinfectiousbronchitisvirusS	(1)			MLV@PE	LVTLLCALC	SAVLYD
bovine coronavirus S	(40)	TVDVTNGL	GTYYVL	DRVYLNTELLL	NGYYPTSGS	TYRNMA
mouse hepatitis virus S	(41)	TVEVSQGL	GTŸYVL	DRVYLNAFLIT	TGYYPVDGS	KERNLA
Consensus	(41)	TVDVTNGL	GTYYVL	DRVYLNTTLLL	NGYYPTSGS	
A CONTRACTOR OF THE CONTRACTOR						<ul><li>Section 3</li></ul>
	(81)		.90	,100	110	120
human coronavirus OC43 S				eels deingie		
avianinfectiousbronchitisvirusS	(23)	SSSYMYYY	QSAFRE	MSGWHLOGEAY	AVMNISSE	NNAGSS
bovine coronavirus S				BELSDEINCIE		
mouse hepatitis virus S				PARSOENDETE		
Consensus	(81)	LKGTVLLS	SWEKP	PFLSDFNNGIE	AKVKNTKVI	Section 4
A Section Administration of the Control of the Cont	4 5 - 46	3 ± 3	a are any	A 45	450	
	(121)	121	130	,140	150	160
human coronavirus OC43 S	(120)	SEFPAUT	GSLDVX	TSYSVVVOPRI	TN2MODGD.	IVTOPED
avianinfectiousbronchitisvirusS	(63)	SGCTVGLT	HUUKVV	NASSIAMTAP- TSYSVVVQR		THE STATE
bovine coronavirus S	(120)	DEEKALUSE	COLLAN	TSYTVÝIEP		
mouse hepatitis virus S	(121)	WINETEAN.	COUNTRY I	TSYSVVVQP		NKLQGLL
Consensus	(121)	SEFFATTI	GOTEVN	ITPIDAAAĞE	T GI	— Section 5
A Abrilla	(404)	101	.170	.180	,190	200
b	(161)	HAZGEZ MAZIN	NODELLO	TICHENIG-NE		
human coronavirus OC43 S avianinfectiousbronchitisvirusS	(100)	EASACATE	IC CO POT	AHENFSDTTVE	NATIONALIA	CPITCM
bovine coronavirus S	(156)	FILLOON	MCEVEN	TICNENIG-NO	TRETWHUD!	revvect
mouse hepatitis virus S	/1491	MARVIONT	TOT. T. P.V	TDEKPNINGNE	T.TGFWHTD	VKPPICV
Consensus	(161)	ETSVCOYT	MCEYPN	TICNPNLG N	RIELWH D	rgvvscL
00110011000	(,0,,			, , , , , , , , , , , , , , , , , , , ,		_ Section 6
	(201)	201	210	220	230	240
human coronavirus OC43 S	(199)	V K B M B T V I	NV NAME TO	YFHFYQEGGT		
avianinfectiousbronchitisvirusS	(126)	T.OOMT.TRV	CAMACMIA	GOLFYNLTVSV	KYPTFRSF	OCVNNLT
bovine coronavirus S	(195)	V KRIJE TV	VNADYT	YTHEYOLGGI	YAYETOTG	VVTKE E
mouse hepatitis virus S				YTHEYQUGGT		
Consensus				YFHFYQEGGTI		
\$5,100(10a0	( ')					

1241   250   260   270   280   280   270   280
human coronavirus OC43 S avianinfectiousbronchitisvirusS bovine coronavirus S bovine coronavirus S consensus  (235) NYTIGTVLSHYVVMBLTCNSALTLEYWVTBLTSKOY mouse hepatitis virus S Consensus  (241) SVYLG TLSHYVVMPLTCN A S LTLEYWVTBLTSRQY Section 8  (281) 281 290 300 310 320  human coronavirus OC43 S avianinfectiousbronchitisvirusS bovine coronavirus S (266) ALAYFVNGTAQDVTL DGSPRGLLACQYNTGNFSDOFF PF bovine coronavirus S Consensus  (271) LLAFNQDVTFNAVDCKSDEMSETKCKTQSTAPPTGV/EL  Consensus  (281) 281 290 300 310 320  human coronavirus OC43 S (275) LLAFNQDVTL DGSPRGLLACQYNTGNFSDOFF PF bovine coronavirus S (271) LLAFNQDVTFNAVDCKSDEMSETKCKTQSTAPPTGV/EL  Consensus  (281) LLAFNQDGVTFNAVDC SSFMSETKCKTQSTAPSTGV/EL  Section 9  (321) 321 330 340 350 360  human coronavirus OC43 S avianinfectiousbronchitisvirusS (381) NGYTVQPTADVYRFKPNLENCNTFAWLNDKSVPSPLNWER  avianinfectiousbronchitisvirusS (315) NGYTVQPTADVYRFKPNLENCNTFAWLNDKSVPSPLNWER  mouse hepatitis virus S (311) NGYTVQPTADVYRFIPNLPDCNTTAWLNDKSVPSPLNWER  Consensus  (321) NGYTVQPTADVYRRIPNLP CNTEAWLNDKSVPSPLNWER  Consensus  (321) NGYTVQPTADVYRRIPNLP CNTEAWLNDKSVPSPLNWER  Section 10
avianinfectiousbronchitisvirus S bovine coronavirus S mouse hepatitis virus S Consensus  (229) S. T.G.D.T.T.D.Y.Y.V.D.F.T.G.D.F.T.A.G.S.T.F.A.P.F.Y.W.T.P.L.V.K.R.Q.Y.  Consensus  (229) S. T.G.D.T.T.D.Y.Y.V.D.F.T.G.D.F.T.A.G.S.T.F.A.P.F.Y.W.V.T.P.L.V.K.R.Q.Y.  Consensus  (241) SVYLG ILSHYYVMPLTCN A S LTLEYWVTPLTSR.Q.Y.  Section 8  Avianinfectiousbronchitisvirus S bovine coronavirus OC43 S mouse hepatitis virus S Consensus  (275) LLAFNQDEHFFNAED MSDEMSETKEKT STAPFT V.F.L.  (266) ALAYFVNGTAQDVTL DGSPRGLHACQYNTGNFSDOFF PF bovine coronavirus S (271) LLAFNQDGVTFNAVD KSDEMSETKEKT LSTAPFT V.F.L.  (281) LLAFNQDGVTFNAVD KSDEMSETKEKT STAPFT V.F.L.  Section 9  (321) 321  330  340  350  360  human coronavirus OC43 S avianinfectiousbronchitisvirus S bovine coronavirus S (315) NGYTVOPTADVYRKKPNLFNCNT AWLNDKSVPSPLNWER  bovine coronavirus S (311) NGYTVOPTADVYRKKPNLFNCNT AWLNDKSVPSPLNWER  Consensus  (321) NGYTVOPTADVYRKVPNLP CNIEAWLNDKSVPSPLNWER  Consensus  (321) NGYTVOPTADVYRRIPNLP CNIEAWLNDKSVPSPLNWER  Section 10
bovine coronavirus S mouse hepatitis virus S Consensus  (229) S. IGDITTOYYVIPFIGNPTAGSTFAPPYWVFPLVKROY Consensus  (241) SVYLG ILSHYYVMPLTCN A S LTLEYWVTPLTSRQY  Section 8  (281) 281 290 300 310 320  human coronavirus OC43 S avianinfectiousbronchitisvirusS bovine coronavirus S (271) LAFNODTTFNAEDCMSDEMSETKCKTQSTAPPTQVFED  bovine coronavirus S (271) LAFNODTTFNAEDCMSDEMSETKCKTQSTAPPTQVFED  mouse hepatitis virus S (269) LFNFNQKEVETSAVDCASSYTSETK_KTQSMLPSTGVYED  Consensus  (281) LLAFNQDGVIFNAVDC SSFMSEIKCKTQSIAPSTGVYED  (281) LLAFNQDGVIFNAVDC SSFMSEIKCKTQSIAPSTGVYED  Section 9  (321) 321 330 340 350 360  human coronavirus OC43 S (315) NGYTVQPTADVYRRKPNLENCNITAWLNDRSVPSPDNWER  avianinfectiousbronchitisvirusS (246) TNSSLVKQKFEVYR
mouse hepatitis virus S Consensus  (241) SVYLG ILSHYYVMPLTCN A S LTLEYWVTPLTSRQY  Section 8  (281) 281 290 300 310 320  human coronavirus OC43 S avianinfectiousbronchitisvirusS bovine coronavirus S (275) LLAFNQDCILFFNAED MSDEMSELKCKTQSIAPPTQYYEL  avianinfectiousbronchitisvirusS bovine coronavirus S (271) LLAFNQDCVIFNAVDCKSDEMSELKCKTQSIAPPTQYYEL  Consensus (281) LLAFNQDGVIFNAVDC SSFMSELKCKTQSIAPSTEVYEL  Consensus (281) LLAFNQDGVIFNAVDC SSFMSELKCKTQSIAPSTGVYEL  Section 9  (321) 321 330 340 350 360  human coronavirus OC43 S avianinfectiousbronchitisvirusS (246) TNSSLVKQKFTVYKENSWNTTCTLHNFIEHD bovine coronavirus S (311) NGYTVQPIADVYRRIPNLPDCNT AWLNDKSVPSPLNWER  Consensus (321) NGYTVQPIADVYRRIPNLP CNIEAWLNDKSVPSPLNWER  Consensus (321) NGYTVQPIADVYRRIPNLP CNIEAWLNDKSVPSPLNWER  Section 10
human coronavirus OC43 S avianinfectiousbronchitisvirus S bovine coronavirus S Consensus  (281) 281 290 300 310 320  ALAFNODETIFNAED MSDEMSETKCKTOSTAPPTGVYED  avianinfectiousbronchitisvirus S bovine coronavirus S (271) ILAFNODETIFNAED MSDEMSETKCKTOSTAPPTGVYED  bovine coronavirus S (271) ILAFNODETIFNAED MSDEMSETKCKTOSTAPPTGVYED  Consensus (271) ILAFNODETIFNAED MSDEMSETKCKTOSTAPPTGVYED  Consensus (281) ILAFNODETIFNAED MSDEMSETKCKTOSTAPPTGVYED  Section 9  (321) 321 330 340 350 360  human coronavirus OC43 S avianinfectiousbronchitisvirus S bovine coronavirus S (315) NCYTVOPIADVYER KPNLENCNI AWLNDKSVPS PUNWER  avianinfectiousbronchitisvirus S (311) NGYTVOPIADVYER IPNIP DENTITARS VPS PUNWER  Consensus (321) NGYTVOPIADVYER IPNIP CNIEAWLNDKSVPS PLNWER  Consensus (321) NGYTVOPIADVYER IPNIP CNIEAWLNDKSVPS PLNWER  Section 10
human coronavirus OC43 S avianinfectiousbronchitisvirusS bovine coronavirus S Consensus  (281) 281 290 300 310 320  ALAYFVNGTAQDVITLC DGSPRGLEACQYNIGNFSDOFF PF bovine coronavirus S (266) ALAYFVNGTAQDVITLC DGSPRGLEACQYNIGNFSDOFF PF bovine coronavirus S (271) ILAFNQDGVIFNAVDC KSDEMSETKCKTLSTAPST VIEL Consensus (281) LLAFNQDGVIFNAVDC SSFMSEIKCKTQSIAPSTGVYEL Section 9  (321) 321 330 340 350 360  human coronavirus OC43 S avianinfectiousbronchitisvirusS (246) TNSSLVKQKFLVYK ———ENSVNTTCTLHNFIEHM bovine coronavirus S (311) NGYTVQPIADVYRKPNENCNIFAWLNDKSVESPLNWER mouse hepatitis virus S (309) SGYTVQPVGVVYRRVANIFACNIFEWLTARSVESPLNWER Consensus (321) NGYTVQPIADVYRRIPNLP CNIEAWLNDKSVPSPLNWER Section 10
human coronavirus OC43 S avianinfectiousbronchitisvirusS bovine coronavirus S mouse hepatitis virus S Consensus  (271) LLAFNOD TEFNAED MSDEMSETKCKTOSIAPPTGVEED bovine coronavirus S (271) LLAFNOD TEFNAVD CKSDEMSETKCKTLSIAPSTEVEED Consensus  (281) LLAFNOD TEFNAVD CKSDEMSETKCKTLSIAPSTEVEED Consensus  (281) LLAFNOD TEFNAVD CKSDEMSETKCKTLSIAPSTEVEED Consensus  (281) LLAFNOD TEFNAVD CKSDEMSETKCKT CSTAPSTEVEED Section 9  (321) 321 330 340 350 360  human coronavirus OC43 S (315) NGYTVOPTAD VERKENLENCNTEAW LNDKS VESPENWER avianinfectiousbronchitisvirus S (246) TNSSLVKOKFT VER bovine coronavirus S (311) NGYTVOPTAD VERTENLENCNTEAW LNDKS VESPENWER (309) SGYTYOPVGVYYR VANLEACNTE WITTARS VESPENWER Consensus  (321) NGYTVOPTAD VERTENLENC CNIEAW LNDKS VESPENWER Section 10
avianinfectiousbronchitisvirusS (206) ALAMFVNGTAQDVILGDGSPRGLLACQYNTGNFSDGFFPF bovine coronavirus S (271) LIAFNQDGVIFNAVDCKSDEMSEIKCKTLSIAPSTEVIEL mouse hepatitis virus S (269) LFNFNQKEVETSAVDCASSYTSEIKEKTQSMLPSTGVYEL Consensus (281) LLAFNQDGVIFNAVDC SSFMSEIKCKTQSIAPSTGVYEL Section 9  (321) 321
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mouse hepatitis virus S Consensus  (269) FNFNQK_VETSAVD_ASSYTSEIK_KTOSMLPSTCV_YEL  Consensus  (281) LLAFNQDGVIFNAVDC SSFMSEIKCKTQSIAPSTGVYEL  Section 9  (321) 321
Consensus (281) LLAFNQDGVIFNAVDC SSFMSEIKCKTQSIAPSTGVYEL Section 9  (321) 321 330 340 350 360  human coronavirus OC43 S (315) NGYTVQPIADVYRIKPNLENCNIKAWLNDKSVPSPLNWER avianinfectiousbronchitisvirusS (246) TNSSLVKQKFLVYKENSVNTTCTLHNFIFHN bovine coronavirus S (311) NGYTVQPIADVYRIPNLPDCNIFAWLNDKSVPSPLNWER mouse hepatitis virus S (309) SGYTVQPVGVYYRVANIPACNIFENLTARSVPSPLNWER Consensus (321) NGYTVQPIADVYRRIPNLP CNIEAWLNDKSVPSPLNWER Section 10
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bovine coronavirus S (311) NGYTVQPLADVYREIPNLPDCNI AWLNDKSVPSPLNWER mouse hepatitis virus S (309) SGYTVQPVGVVYREVANLPACNIFEWLTARSVPSPLNWER Consensus (321) NGYTVQPIADVYRRIPNLP CNIEAWLNDKSVPSPLNWER Section 10
mouse hepatitis virus S (309) SGYTVOPVGVVYRRVANLPACNIE ENLTARSVESPLNWER Consensus (321) NGYTVQPIADVYRRIPNLP CNIEAWLNDKSVPSPLNWER Section 10
Consensus (321) NGYTVQPIADVYRRIPNLP CNIEAWLNDKSVPSPLNWER Section 10
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human coronavirus OC43 S (355) KTESNCTENMSSTMSFTCADSTTCNNLDAAKT GMCFSST avianinfectiousbronchitisvirusS (277) ETGANPNPSGV-NIOTYQTKTAQSGY-NFN SFT
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mouse hepatitis virus S (349) KTFOTCHENISSILRYV AESLFCNNIDASKVY GRCGGST Consensus (361) KTFSNCNFNMSSLMSFIQADSFTCNNIDAAKIYGMCFSSI
Consensus (301) RIESNONENWS SHASE I QABBET CHAIRMING TO Section 11
(401) 401 410 420 430 440
human coronavirus OC43 S (395) TIDKFATPNGRKVDLQLGNIGYLQSFNYRIDTTATSCQUY
avianinfectiousbronchitisvirusS (311) SSFVYKESNFMYGSYHPSCKFRIETI INGDWFNSLSVSTA
bovine coronavirus S (391) TIDKFALPNGRKVDLQLGNLGYTQSFNYRIDTRATECQLY
mouse hepatitis virus S (389) SVDKEAVPR SROVDLOLGNSGELQTAMYKIDTAATECOLH
Consensus (401) SIDKFATPNGRKVDLQLGNLGYLQSFNYRIDTTATSCQLY
Section 12
(441) 441 450 460 470 480
human coronavirus OC43 S (435) NUPAANVSVSRENPSTWNKREGETEDSVEKERPAGVLTN
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	(481)	481	<i>4</i> 90	500	510	520
human coronavirus OC43 S	(475)	HOVVYAORO	#KAPKNF@1	cking-sc	vesep	GKNN
avianinfectiousbronchitisvirusS	(357)	GCKGSV	FKGRATCE	YAYSYGGPS	LCKGVYS	G
bovine coronavirus S			EKASTNE			
mouse hepatitis virus S			HTVRSSXE)			
Consensus	(481)	HDVVYAQHO	FKARSNFCI	PCKL G LS	VGSGP	K - Section 14
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	(521)	521	530	540	550	560
human coronavirus OC43 S avianinfectiousbronchitisvirusS	(388)	<b>GTG#GRUP</b>	МАТАС <mark>ОЙ-</mark> -	hear	METIE	EGITKCE.
bovine coronavirus S	(500)	7777 TO TO TO TO TO TO TO TO TO TO TO TO TO	nyltechnal	A OCDCE TO TE	No Thick A	NGDV KOD
mouse hepatitis virus S	(497)	GIGICFAGI	waren en en en en en en en en en en en en e	a O C D C TO G T T	MALES NA	31.01 t 3230.02 t
Consensus		GIGTCPAGI	NYLTC N	T.C.T.F	DPIT	TG YKCP
	(02.1)	GIGIGING				Section 15
	(561)	561	570	.580	590	600
human coronavirus OC43 S	(541)	OTESTVET	EHSSGLAV		-cńscec	
avianinfectiousbronchitisvirusS	(388)	ELDH	VFEGGLEVY	VTKSGG	2700.000	to the same and the same and
bovine coronavirus S	(551)	OTKYLVGIO	EHS SGLAL	KSDHCS	-GNPCTC	QEQAFLG
mouse hepatitis virus S	(497)	-KSAFVNV	SDHCEGLGV	LEDNCENAL	PHKGCIC	ANNSFIG
Consensus	(561)	QTKALVGI	GEHCSGLAV	KSDHCG	GN CTC	POAFLG
						Section 16
	(601)	601	610	620	630	640
human coronavirus OC43 S		WSADSCLO	FOKÇNIFAN	FELHDVNS	LICSIDI	KANTDI
avianinfectiousbronchitisvirusS	(407)	A STANDARD CONTRACTOR OF THE STANDARD CO.	of the presentation of the contraction of	sr-iqt <i>i</i>	WEPPVIT	ONHYNNE
bovine coronavirus S	/E071	TATE OF TAXABLE PARTY OF THE PA				
	(507)	MOADOCHA		FTEHDVNS(	TYCSUDI	4KSNTD1
mouse hepatitis virus S	(536)	WSHDTCLVI	NDRCQIFAN	ILLHGINSO	TTCSTDL	OLPNIEV
mouse hepatitis virus S Consensus	(536)	WSHDTCLVI	NDRCQIFAN GDRCNIFAN	ILLHGINSO	TTCSTDL	QLPNTEV QKANTDI
•	(536) (601)	WSHDTCLVI WS DSCLQ	NDRCOIFAN GDRCNIFAN	ILLMGINSO FILHDINSO	TTCSTDL	OLPNTEV QKANTDI — Section 17
Consensus	(536) (601) (641)	WSHDTGLVI WS DSCLQ0	NDRCQTFAN GDRCNIFAN 650	ILLNGINSO FILHDINSO 660	TTTCSTDL TTTCSTDL 670	OLPNIEV QKANIDI — Section 17 680
Consensus human coronavirus OC43 S	(536) (601) (641)	WSHDTGLVI WS DSCLQ0	NDRCQTFAN GDRCNIFAN 650	ILLNGINSO FILHDINSO 660	TTTCSTDL TTTCSTDL 670	OLPNIEV QKANIDI — Section 17 680
Consensus human coronavirus OC43 S avlaninfectiousbronchitisvirusS	(536) (601) (641) (617) (427)	WSHDTGLVI WS DSCLQO 641 TLGVCVN TUNTGTD	NDRCQTFAN GDRCNIFAN 650 DLYGTLGGG	ILLEGINSO FILHDINSO 660 FFVEYNAT FITNATOSA	TTCSTDL TTCSTDL 670 YNSWONI YNSYNY	CLPNTEV QKANTDI — Section 17 680 • YPSNGN A AGLA
human coronavirus OC43 S avlaninfectiousbronchitisvirusS bovine coronavirus S	(641) (647) (627)	WSHDTGLVI WS DSCLQO 641 TLGYCVN TWNTGFD TLGVCVN	NDREQTFAN GDRENIFAN 650 DLIGTLESS NITERTESS DLIGTTESS	ILLNGINSO FILHDINSO 660 TFVE YNAT FITN TDSA TFVE NAT	TTCSTDL 670 (YNSWONI AVSYNY (YNSWONI	CLPNTEV OKANTDI Section 17 680 EYPSNGN A AGLA
Consensus human coronavirus OC43 S avlaninfectiousbronchitisvirusS	(536) (601) (641) (617) (427) (627) (576)	WSHDTGLVI WS DSCLQO 641 TLGVCVN TUNICID ILGVCVN VTGLSKK	NDRCQTFAN GDRCNIFAN 650 DENGTLGEGG NTYGRTEDS DLEGIFGOS DDYCTTGRG	ILENGINSO FILHDINSO  660  TFVE YNAT FITNETOSE TEVE NAT VEKEWKAD	TTCSTDL TTCSTDL 670 (YNSWONI YVSYNY CYNSWONI YNSWOTI	CLPNTEV OKANTDI — Section 17 680 EYPSNGN A AGLA EYDSNGN
human coronavirus OC43 S avlaninfectiousbronchitisvirusS bovine coronavirus S mouse hepatitis virus S	(536) (601) (641) (617) (427) (627) (576)	WSHDTGLVI WS DSCLQO 641 TLGVCVN TUNICID ILGVCVN VTGLSKK	NDREQTFAN GDRENIFAN 650 DLIGTLESS NITERTESS DLIGTTESS	ILENGINSO FILHDINSO  660  TFVE YNAT FITNETOSE TEVE NAT VEKEWKAD	TTCSTDL TTCSTDL 670 (YNSWONI YVSYNY CYNSWONI YNSWOTI	CLPNTEV OKANTDI — Section 17 680 EYPSNGN AFAGLA EYDSNGN
human coronavirus OC43 S avlaninfectiousbronchitisvirusS bovine coronavirus S mouse hepatitis virus S	(536) (601) (641) (617) (427) (627) (576) (641)	WSHDTGLVI WS DSCLQO 641 TLGYCVN TUNTOFD TLGVCVN VTGLSEKY ILGVCVNY	NDRCQTFAN GDRCNIFAN 650 DENGTLGEGG NTYGRTEDS DLEGIFGOS DDYCTTGRG	ILENGINSO FILHDINSO  660  TFVE YNAT FITNETOSE TEVE NAT VEKEWKAD	TTCSTDL 670 (YNSWONI AVSYNY (YNSWONI YNSWOTI (YNSWONI	CLPNTEV OKANTDI — Section 17 680 EYPSNGN ANAGLA EYOSNGN LYDSNGN
human coronavirus OC43 S avlaninfectiousbronchitisvirusS bovine coronavirus S mouse hepatitis virus S	(641) (641) (647) (627) (627) (576) (641) (681) (657)	WSHDTGLVI WS DSCLQO 641 TLGVCUN TUNTGTO TLGVCUN VTGIC KN ILGVCVNY	NDRCQTFAN GDRCNIFAN 650 DLYGILGGG NIVERTEOC DLYGITGOG DLYGITGOG DLYGITGOG 690 INRTEMTRS	ILLNGINSC FILHDINSC  660  IFVE NAT IFVE NAT VEKE KAD IFVEVNAT  700  CYSGRVSA	OTT CSTDL  OTT CSTDL  OTO  OTO  OTO  OTO  OTO  OTO  OTO	QLPNTEV QKANTDI Section 17 680 A AGLA LYDSNGN LYDSNGN LYDSNGN Section 18 720
human coronavirus OC43 S avianinfectiousbronchitisvirusS bovine coronavirus S mouse hepatitis virus S Consensus	(641) (641) (647) (627) (627) (627) (641) (681) (657) (465)	WSHDTGLVI WS DSCLQI  641  TLGVCVN  TWNTGFD  ILGVCVNY  1LGVCVNY  681  LYGERDYL  LLDTSGST	NDRCQTFAN GDRCNIFAN 650 DLIGILGGG NITERTEOS DLEGITEOS DLYGITGQG DLYGITGQG 690 INRTEMIRS DIFVVQGEY	ILLNGINSC FILHDINSC  660  TFVE VNAT FITNETDSA LEVE NAT VEKE KKAD IFVEVNAT  ,700 CYSGRVSA	670  670  CYNSWONI  YNSWONI  YNSWONI  YNSWONI  YNSWONI  YNSWONI  710  ATHANSE	QLPNTEV QKANTDI Section 17 680 EYPSNGN A NGLA EYOSNGN LYOVNGN LYDSNGN Section 18 720 PALLFRN FVVSGGK
human coronavirus OC43 S avianinfectiousbronchitisvirus S bovine coronavirus S mouse hepatitis virus S Consensus human coronavirus OC43 S avianinfectiousbronchitisvirus S bovine coronavirus S	(641) (641) (647) (627) (627) (627) (641) (681) (657) (465) (667)	WSHDTCLVI WS DSCLQI  641  TLGVCUN  TUNTOFOL  TLGVCUN  LGVCUNY  681  LYGERDYL  LYGERDYL  LYGERDYL	NDRCQTFAN GDRCNIFAN 650 DLIGILGGG NITERTEOC DLIGITGOC DLYGITGOC DLYGITGOC DLYGITGOC DLYGITGOC DLYGITGOC DLYGITGOC TORTEMIRS	ILLNGINSC FILHDINSC  660  TFVE YNAT FITNETDS/ IFVE NAT VEKE WKAD IFVEVNAT  700  CYSGRVSAL GLNYYKVNI CYSGRVSAL	670  670  CYNSWONI  YNSWONI  YNSWONI  YNSWONI  YNSWONI  710  AEHANSSE	CLPNTEV OKANTDI — Section 17 680 EYPSNGN A NGLA EYOSNGN LYOVNGN LYDSNGN — Section 18 720 PALLFRN PVVSGGK PAGLFRN
human coronavirus OC43 S avianinfectiousbronchitisvirus S bovine coronavirus S mouse hepatitis virus S Consensus human coronavirus OC43 S avianinfectiousbronchitisvirusS	(641) (641) (647) (627) (627) (627) (641) (681) (657) (465) (667) (616)	WSHDTGLVI WS DSCLQO 641 TLGVCVN TLGVCVNY TLGVCVNY LGVCVNY 681 LYGERDYL LYGERDYL LYGERDYL LYGERDYL LNGERDYL	NDRCQTFAN GDRCNIFAN 650 DLIGILGGG NITERTEOS DLEGITEOS DLYGITGQG DLYGITGQG 690 INRTEMIRS DIFVVQGEY	ILLEGINSC  660  TFVEYNAT  FITNETOS  IFVEYNAT  VEKEWKAD  IFVEVNAT  700  CYSGRVSA  GLNYYKVNI  CYSGRVSA	670  (YNSWONI  YNSWONI  YNSWONI  YNSWONI  YNSWONI  YNSWONI  710  ATHANSSE  PCEDVNOC  ATHANSSE  ATHKNAPE	CLPNTEV OKANTDI — Section 17 680 EYPSNGN A FAGLA EYDSNGN LYDSNGN — Section 18 720 PALLFRN FVVSGGK PALLFRN PALLYRN

				Section	19
	(721)	721 ,730	,740	,750 7	60
human coronavirus OC43 S	(697)	TKCNYVENUSLT	ROLOPINYFOSY	LGCVVNĄYNŚTAISV	7Q
avianinfectiousbronchitisvirusS	(505)	LVGILTSRMETG	SQLLENGFYIKI	TNGTRRFRRSITENV	7A
bovine coronavirus S				LGCVVNADNSÆSSVV	
mouse hepatitis virus S	(656)	INGSTVESINIS	REENPLNYFDSY	LGCVVNADNRIDEAL	P
Consensus	(721)	IKCNYVFNNSLS	RQLQPINYFDSY	LGCVVNADNSTSEAV	VQ.
				Section	20
	(761)	761 ,770	780	,790 8	300
human coronavirus OC43 S	(737)	TEDLTVGSGYCV	DYSKNERSEGAL	TTGYRFTNEEPFTVI	VS.
avianinfectiousbronchitisvirusS	(545)	WOPYVSYGKEGI	KPDG	SIATIVPK	
bovine coronavirus S	(747)	TEDLTVGSGYGV	DYSTKRRSRRSI	TTGYRETNÉEPETVN	VS.
mouse hepatitis virus S	(696)	NCDURMGAGLEY	DYSKSRRADRSV	SIGYRLTIFEFYIPE	ML
Consensus	(761)	TCDLTVGSGYCV	DYSK RRSRRSI	TTGYRFTNFEPFTV	NS
	49-40 <del>0-400</del>	artistical control and an analysis and a second second second second second second second second second second		Section	21
	(801)		820	The second secon	340
human coronavirus OC43 S	(777)	WNDSLEPVGGLY	etotosetticn	MVHELOUSSELUTT	DC
avianinfectiousbronchitisvirusS	(571)	EQFVAPLENVTE	NVLDENSENLTV	TOTYTOTRMDAVQLI	NO
bovine coronavirus S				mečetkesprvetl	
mouse hepatitis virus S	(736)	VNDSVQSVDGLY	EMQIPPN PTIGH	HEEFIGIRSPEYTH	D.C.
Consensus	(801)	VNDSLEPVGGLY	EIQIPSEFTIGN	MEEFIQTSSPKVTII	DC
				Section	
	(841)		860	870 8	380
human coronavirus OC43 S	(817)	AAFLOL DYNACK	SQLVEYGESECDA	870 8 INATETEVNELEGT:	380 FQ
avianinfectiousbronchitisvirusS	(817) (611)	AAFUCCDYAACK LOYVCGSSLDGA	SOLVEN-SECD KLEQONGPVCDN	870 8 INATITEVNELIOT ILSVVNS GOKEDME	380 F Q E L
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avianinfectiousbronchitisvirusS bovine coronavirus S mouse hepatitis virus S	(817) (611) (827) (776)	AAEUG DYAAGK LQYUCUSSLDGR SAEU DYAACK AAEUG DNTAGR	SQLVE (GSECD) KLEQQESPVCD( SQLVE) SECON QQLVE (GSECV)	870 8 INATLTEVNELLOTI ILSVVNS GOKE ME INAILTE ENELLOTI VNAILNE WILLDNE	380 F Q E L I Q MQ
avianinfectiousbronchitisvirusS bovine coronavirus S	(817) (611) (827) (776)	AAEUG DYAAGK LQYUCUSSLDGR SAEU DYAACK AAEUG DNTAGR	SQLVE (GSECD) KLEQQESPVCD( SQLVE) SECON QQLVE (GSECV)	870 8 LNATLTEVNELLOTE LLSVVNS GOKE ME LNATLTE NELLOTE VNATLNE WILLDIN INAILTEVNELLOTE	BBO FQ FQ MQ FQ
avianinfectiousbronchitisvirusS bovine coronavirus S mouse hepatitis virus S	(817) (611) (827) (776) (841)	AAFIC DYAACK LQYICUSSLDUR SAFIC DYAACK AAFIC DNTACR AAFICGDYAACK	SOLVEYUSECD KLEQQEGPYCDI SOLVEY SECUR OOLVEYSECVE SOLVEYGSECON	870 8 LNATLTEVNELLOTE ILSVVNS GOKEDME INATLTEVNELLOTE VNATLNE NNLLENM INATLTEVNELLOTE Section	880 FQ EL TQ MQ TQ 23
avianinfectiousbronchitisvirusS bovine coronavirus S mouse hepatilis virus S Consensus	(817) (611) (827) (776) (841)	AAFIC DYAAIK LQYICUSSLDIR SAF TDYAACK AAFIC DNTAGR AAFVCGDYAACK	SOLVEYCSECD KLEQQESPVCD() SOLVEY, SECO! COLVEYGSECVE SQLVEYGSECDN 900	870 8 INATITEVNELLUTE ILSVVNS GOKEDME INATITES NELL F VNATINE WILLDIT INATITEVNELLUTE Section 910 8	880 F G L F O M O F O 23 220
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avianinfectiousbronchitisvirusS bovine coronavirus S mouse hepatilis virus S Consensus human coronavirus OC43 S avianinfectiousbronchitisvirusS	(817) (611) (827) (776) (841) (881) (857) (651)	AAFIC DYAAIK LQYVC SSLD R SAFFC DYAACK AAFVC DNTACR AAFVC DNTACR AAFVC DNTACR AAFVC DNTACR AAFVC DNTACR AAFVC DNTACR AAFVC DNTACR AAFVC DNTACR AAFVC DNTACR AAFVC DNTACR AAFVC DNTACR AAFVC DNTACR AAFVC DNTACR AAFVC DNTACR	SOLVEYC SECON KLEQQEGPVCDQ SQLVEYC SECVN SQLVEYGSECVN 900 LSTKLKDCVNENAGENTPVLSN	870 8 INATITEVNELLOTT ILSVVNSVGOKEOMI INATITES/NELLOTT VNATINE*NNLLONT INATITEVNELLOTT Section 910 9 VDDINFSRVIGELG	880 FG L G G G G G G G G G G G G G G G G G G
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- September - Sept				*		Section 25
(96	1) 961		970	.980	990	1000
human coronavirus OC43 S (93	o) GG	AEIR	o z z z v	QSYKCIK / LEDIN	SENOISGY	LAATS
avianinfectiousbronchitisvirusS (71	7) A	PLGFFK	CIACA	REYNGLLV-1811	TAEMQALY	PSSLVA
bovine coronavirus S (94	0) GG	AD-TR	ditay	OSANGIKAME TI	SENDISGY	LLAATS
mouse hepatitis virus S (89	6) GG	QEVR	DLLGV	Oblucik//EMP/I	SESQISG	TGATA
	1) GG			QSYNGIKVLPPLI		
ALL ALL DEBUG HIS CONTROL OF THE CON	<u> </u>		****			Section 26
(100	1) 100	1	,1010	,1020	,1030	1040
human coronavirus OC43 S (96	8) AS	LEPEWT	NEAGV	HAYLAYYY LIĞI	CV PMOVES.	ONG KINE
				PEATQLZARITH		
				HTYINV JYKING		
mouse hepatitis virus S (93	4) ĀA	MEPPWS	?-AGV	AFSILSŸQYRINGI	LEVENNVLS	ENUKMI
Consensus (100	1) AS	LFPPWS	AAAGV	PFYLNVQYRING	GVTMDVLS	QNQKLI
and the state of t						Section 27
(104	1) 104	1	1050	,1060	,1070	1080
human coronavirus OC43 S (100	8) (N	A- UNLL	EÇ.ÎAY	THOATNSAINKE	A PANAR	ALNNIE
avianinfectiousbronchitisvirusS (79	7) AA	SFIRKAL	GHM JE	DERSTSLATOOT	DVVSKOSA	ILTETM
bovine coronavirus S (101	8) AN	A HANNA	GATOE	TTDAUNSALVKI	AVVINANAE	ALNNLL
mouse hepatitis virus S (97	4) AS	ASE#4N/SL	GAIOD	GEDAINS ALGEL	SWNANAE	ALNNLL
Consensus (104	1) AN.	AFNNAL	GAIQE	GFDATNSALVKI(		
A CONTRACTOR OF THE PROPERTY O				, , , , , , , , , , , , , , , , , , , ,		Section 28
(108	1) 108	1	1090	1100	,1110	1120
human coronavirus OC43 S (104	8) QQ	ISNRTG	A T-SIAS	Life Tiskudi, be	ENGIPERI	NGELTA
avianinfectiousbronchitisvirusS (83	7) AS	inkudiğ	ALL: SV	TOTTYQQFDFTQ	NEWYDIAL	TGROSS
bovine coronavirus S (105 mouse hepatitis virus S (105	8) QQ	DSNREG	A-71.58	Les LERLDALE	<sup>A</sup> Ωri&IUbilia	NGRATA
mouse hepatitis virus S (101	4) NO	LSNRFC	a leas	TOSTLIRIESVE	eke et demi	NG LTA
Consensus (108	11) QQ	LSNRFG.	AISAS	LQEILSRLDALE		
A minimum and the second secon						Section 29
(112	(1) 112	1	.1130	1140	1150	1160
human coronavirus OC43 S (108	8) III	AYVOQ	lspst	LVKESAAQSMET	Verily Ray 8	STINE
avlaninfectiousbronchitisvirusS (87	7) ES	VLASAK	QAEYI	RESQUELLETQE	even kegs	IRYSTO
bovine coronavirus S (109	)8) LN	AYVSQQ	LSDS4	LVKESAAQAMEK	yne sykalii s	SHENER
mouse hepatitis virus S (108						
Consensus (112	(1) LN	AYVSQQ	LSDST	LVKFSAAQAMEK	VNECVKSQS	Section 30
Benganista transfer and the second se						
(110	31) 116	) <b>1</b> 	,1170	1180	,1190	1200
human coronavirus OC43 S (112	28) 兵款	CNHITS	TWONA	BACTABLEASA	PIKYVTARV	SPOLCI
avianintectiouspronchitisvirus5 (9)	12727	ASK MAY LIT	LPHNE	PERINALISM CERTIFICATION OF THE	<b>終しつむ V は V エム</b>	T V ice is delivery
bovine coronavirus S (113	3 <b>6</b> ) 四的	SHILLS	PAMM	LAY PARTHURNA	FIRMATURA	5十年行五
mouse hepatitis virus S (10						
Consensus (11)	)) GN	GNHIIS	TAĞNA	PYGLYFIHFSYV	PTSEVTAKV	SEGUCT

				Si	ection 31
(1201)	1201	1210	1220	,1230	1240
human coronavirus OC43 S (1168)	AGDRG	·I/:PKS	TYFVNVNNTWI	MY TOSGYYY	PEPAR
avianinfectiousbronchitisvirusS (957)	KPANASQYA	IVPANGE	UJI FI QVNGSY	YLYARDMYM	RALI
bovine coronavirus S (1178) mouse hepatitis virus S (1134)	AGDRG	·IXPKS	STEANANMLMI	MF. GSGYIY	FEPLL
mouse hepatitis virus S (1134)	SGDRG	T > P.KA	KKKAODDEEN!	KETGBSYKY	ABP 110
Consensus (1201)	AGDRG	IAPKS	GYFVNVNNTW	MFTGSGYYY	PEPIT
				S	ection 32
(1241)	1241	,1250	,1260	,1270	1280
human coronavirus OC43 S (1202)	ENNVIVMST	TO A VITA TE	CAPYVMLNTSL	P-NTPD#KE	ist DQN
avianinfectiousbronchitisvirusS (997) bovine coronavirus S (1212)	AGDVTLTS	<b>CANTIVE</b>	VNKTVITTEV	DNDDFDEND	ELSKW
bovine coronavirus S (1212)	GNNVVVMSI	HAVNYTE	(APDVMINIST	P-NERYEKE	TLDQtf
mouse hepatitis virus S (1168)	DKNSVIMSE	CAVETER	CAPEVFUNTSI	P-NPPDFKE	FIDKM
Consensus (1241)	ENNVVVMSS	CAVNYTE	CAPDVMLNTSI	P NLPDFKE	ELDQW
A CONTRACTOR OF THE PROPERTY O				S	ection 33
(1281)	1281	,1290	,1300	,1310	1320
human coronavirus OC43 S (1241)	FKNOTSVAL	DLSLDY-	INTERSULO	VEMN GOBA	TKVIII
avianinfectiousbronchitisvirusS (1037) bovine coronavirus S (1251)	WNDTKHEL	DEDKEN-	YTXPILLOID	SSIDRIQGV	TQGIM
bovine coronavirus S (1251)	FKNOTSVA	DESEDY-	INVIENTLO	demnik <b>l</b> jea	EKVIN
mouse hepatitis virus S (1207)	EKNOTSLA	PLSLDE	KLNATLIJUTT	YEMNRIQDA	TKKIM
Consensus (1281)	FKNQTSVAL	PDLSLDY	INVTFLDLQ	EMNRIQEA	IKVLN
MANAGEMENT AND AND AND AND AND AND AND AND AND AND			A CONTRACTOR OF THE CONTRACTOR	S	ection 34
(1321)	1321	,1330	1340	1350	1360
human coronavirus OC43 S (1279)	QaYi,NEKD	cgtybyyv	and ell constitut	CL GVAMLV	GLEET
avianinfectiousbronchitisvirusS (1075)	DE T. F. DIEF. K	SILKT	ekiremi yatat	AFATTI FTI	ILGWV
bovine coronavirus S (1289)	QAYINIKD	GTYEY	rik ik entenditätit	GFÄGVAMLV	LIFFI
bovine coronavirus S (1289) mouse hepatitis virus S (1247)	EGYUNEKEN	/GTYEM!	vikoreig sivivilili.	GLAGVAVCV	LFFI
Consensus (1321)	QSYINLKD:	GTYEYY	AKMBMAAMPTI	GLAGVAMLV	LLFFI
A CALLER AND THE RESIDENCE OF THE PROPERTY OF				S	ection 35
(1361)	1361	,1370	,1380	,1390	1400
human coronavirus OC43 S (1319)	CCCTCCG-		-rscrkacusc	CDDYTGYQE	LVIKT
avianinfectiousbronchitisvirusS (1115)	FFM AGCG	CCGCFG:	IMPLMSKUSKK	SSYCTTED	DVVTE
bovine coronavirus S (1329)	ecc recg-		-rsonkkidec	сбрутсной	LVIKT
mouse hepatitis virus S (1287)	eccife-		-SCCFKHUENO	CDETIGGHQI	SIVIH
Consensus (1361)			TSCFKKCGGC	CDDYTGHQE	LVIKT
	44				
(1401)	1401 1408				
human coronavirus QC43 S (1350)		SEQ ID	NO: 9918		
avianinfectiousbronchitisvirusS (1155)	OMRPKKSV	SEQ ID	NO: 9909		
bovine coronavirus S (1360)	SHED	SEQ ID	NO: 9891		
mouse hepatitis virus S (1318)		SEQ ID	NO: 9902		
Consensus (1401)		~			
OUISCIISUS (1401)	no ed to to				

## FIGURE 5

					······································	****		Section 15
	(589)	589		600	,6	10 KUNKERU KUNKERU	,620	630
human coronavirus OC43 S	(565)	NS	RPQA	$L(\frac{1}{2}N)^{\frac{1}{2}}$	vosetige:	KINTERU	ETTHDV	u Sallirea
bovine coronavirus S	(575)	NPCI	COPOAF	LGVSV	/DSCLQGI	RUNTERN	FILHDV	LESSTEGS
mouse hepatitis virus A59 S	(524)	KGĢĪ	CANNST	IGPSF	HOTETVNE	ircoilean	ILUNGI	ustrics
Consensus	(589)	N CT	C PQAF	LGWS	DSCLQGD	RCNIFAN	FILHDV	NSGTTCS
CALL PROPERTY AND LANGUAGE AND								_ Section 16
	(631)		64		,650		360	672
human coronavirus OC43 S						TLEOGEF		
bovine coronavirus S	(617)	2101.0	KSNIDI	ILGV	INNYELY	LPÜC: PRIEE	vza'n'at	uzigileski (jin
mouse hepatitis virus A59 S	(566)	m.p.(xt)	LPMIEV	V.T.J.(	物化学登出場	ke Terretan	KEKKAD	Hancythr
Consensus	(631)	TDLQ	KANTDI	ILGVO	CANADTAE	ITGQGIF	VEVNAT	YYNSWQN
		·····						Section 17
	(673)	673	680		690	,700	********************	714
human coronavirus OC43 S	(649)	TELL	SUTHITY	cirkUs	III REER	Kirseyski		Yansser
bovine coronavirus S	(659)	LIXD	Shirillex	GJERALIS	LTHREEM			HANSSEE
mouse hepatitis virus A59 S	(608)	talas in	V a sea n	BF#77I	TYNKTYT		ayejminir	KKDAPER
Consensus	(673)	LLYD	SNGNLY	GFRDY	ITNRTEM	IIRSCYSG	RVSAAF	HANSSEP
	······································	**************************************					D) 7.0 / / 2.7 / A	_ Section 18
	(715)	715	,720		730	.740		756
human coronavirus OC43 S						PINELE		
bovine coronavirus S	(701)	A.L.L.F	RNIKEN	Y-SN:	TLSPQLQ	LEAN ENDS	YLGCVY	SHEDNSHIS
mouse hepatitis virus A59 S	(650)	ALLY	RHINGS	YYns:	NISTEEN	i Ping Kang	YI.GCAT!	MADNRED
Consensus	(715)	ALLF	RNIKCN	YVFNN	ISLSRQLQ	PINYFDS		
					S1		S2	△Section 19
	(757)			,77	0 —	,780 👉 🗝		798
human coronavirus OC43 S	(733)	ISVQ	TC'LTTV	GSGYC	WEISKN	SRGALT SRRSTE	i orrei	NEEPERV
bovine coronavirus S	(743)	SVVQ	TCDETY	GSGY	VDY OTK	PSRRSID		NEFFETY
mouse hepatitis virus A59 S	(692)	EALP	NGDERM	CACL.	VEYSKS	LAHRSVS	ig: eui	TELEXIP
Consensus	(757)	AVQ	TCDLTV	GSGY	CVDYSK R	RSRRSIT'	<b>IGYRFT</b>	NFEPFTV
					MANUSCRIM MANUSCRIPT AND A STREET AND A STREET AND A STREET AND A STREET AND A STREET AND A STREET AND A STREET			_ Section 20
	(799)	799		810		20	830	840
human coronavirus OC43 S						ya chmve		
bovine coronavirus S	(785)	NSVE	D'S LEPV	GGUTE	LIULIRSES	pt cnmbe	redest	
mouse hepatitis virus A59 S	(734)	MLYN	DSVQSM	DÜDÜ	MOTETNE	TTGHET	i noïra	
Consensus	(799)	NSVN	DSLEPV	GGLYE	IQIPSEF	TIGNMEE	FIQTSS	PKVTIDC
								<ul><li>Section 21</li></ul>
	(841)	841	,85		860		370	882
human coronavirus OC43 S	(817)	AATV	CHTYAN	QKSQ1	ay ny nash c	DAINATE	riynej	Trucke
bovine coronavirus S	(827)	SATA	FAYNE	CKSO	A PARTY OF A PARTY	natal Entra	T. P. M. N. E. E.	E.Durantaria
mouse hepatitis virus A59 S	(776)	MATO	CHANTE	ROOM	NH YEAH	VXVIII	NHAMMIN	OTOMOTO
Consensus	(841)	AAFV	CGDYAA	CKSQI	VEYGSFC	DNINAIL!	PEVNEL	LDTTQLQ

#### FIGURE 6

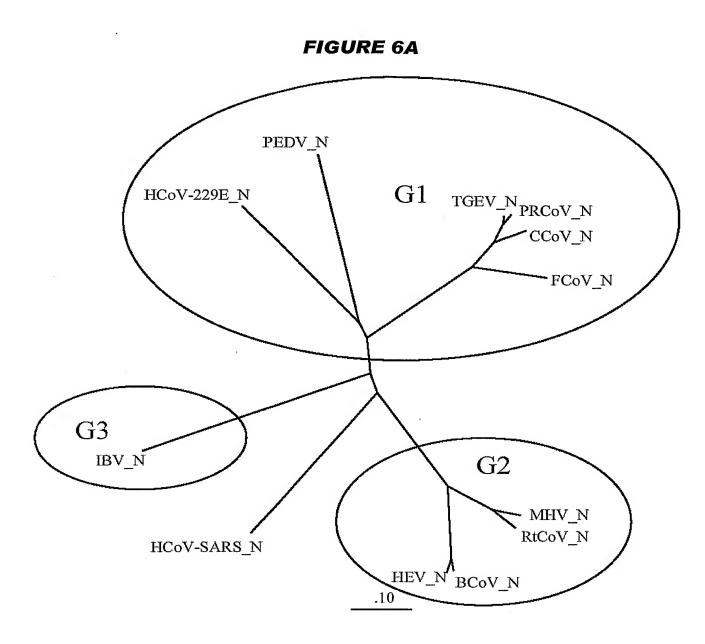
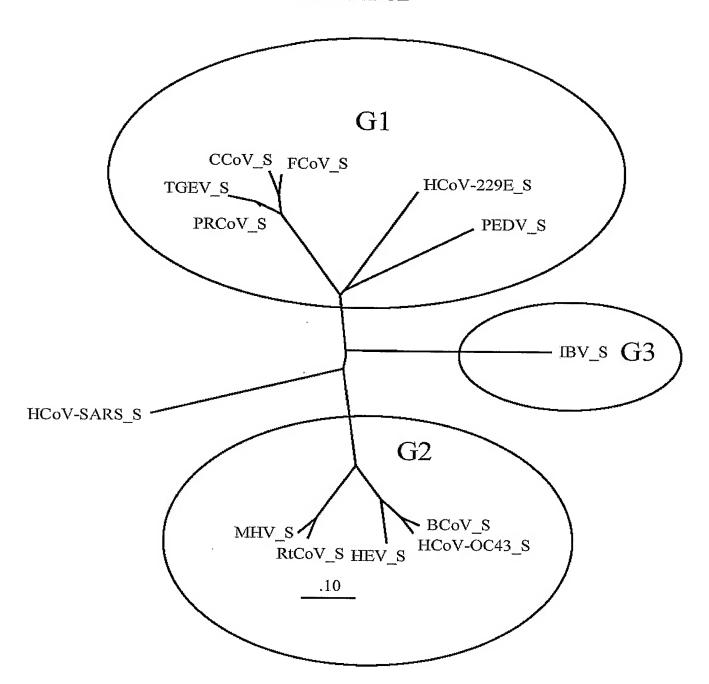
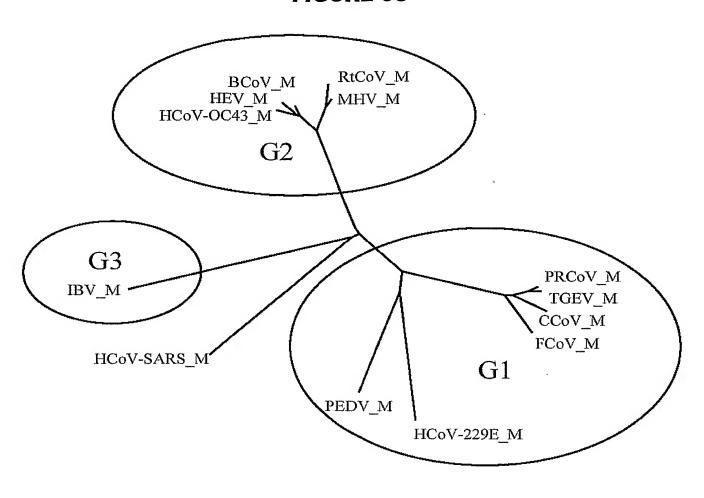


FIGURE 6B



## FIGURE 6C



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## FIGURE 7

## FIGURE 7A

D NO:6061		ID NO:		MFVLLVAYALLH	12 60
SEQ ID NO:6042	SEQ	ID NO:	:6061		
SEQ   ID   NO: 6072					
SEQ   ID   NO:6053					
SEQ ID NO:6053					
SEQ   ID   NO : 6053	SEQ	TD MO:	:60/2		21
10 NO:6051					
SEQ   ID NO:6061	~				100
SEQ   ID NO:6065					
SEQ   ID   NO:6069					
SEQ ID NO:6042        VYYPDEIFRSDTLYLTQDLFLPFYSNVTGFHTINHTFGNP 79           SEQ ID NO:6072					
SEQ   ID   NO:6053					
SEQ   ID   NO   6053					
SEQ ID NO:6057         TTRNFNSAEGAIICICKGSPPTTTTESSLTCNWGSECRLNHKFPICPSNSEANCGNMLYG         180           SEQ ID NO:6061         KATNGNTNAIARLRICQFPDNKTLGPTVNDVTTGRNCLFNKAIPAYMRDGNDIVVGITMD         167           SEQ ID NO:6065         PTSGSTYRNMALKGTLLLSTLWFKPPFLSDFTNGIFFAKVKNTKVLKDGVMYSEFPAITIG         129           SEQ ID NO:60642         PVDGSKFRNLALTGTRSVSLSWPQPPYLSOFNDGIFAKVQNLKKTSTPSGATAYFPTIVIG         131           SEQ ID NO:6072         VIPFKDGIYFAATEKSNVVRGWVFGSTMNNKSQSVIIINNSTNVVIRACNFELCDNFFFA         139           SEQ ID NO:6053	PEQ	ID NO.	.0072		40
SEQ ID NO:6057         TTRNFNSAEGAIICICKGSPPTTTTESSLTCNWGSECRLNHKFPICPSNSEANCGNMLYG         180           SEQ ID NO:6061         KATNGNTNAIARLRICQFPDNKTLGPTVNDVTTGRNCLFNKAIPAYMRDGKDIVVGITMD         167           SEQ ID NO:6065         PTSGSTYRNMALKGTLLLSTLWFKPPFLSDFTNGIFAKVKNTKVLKDGVMYSEFPAITIG         129           SEQ ID NO:60642         VUPFKDGIYFAATEKSNVSLSWPQPPYLSOFNDGIFAKVQNLKTSTPSGATAYFPTIVIG         131           SEQ ID NO:6072         VUPFKDGIYFAATEKSNVVRGWVFGSTMNNKSQSVIIINNSTNVVIRACNFELCDNFFFA         139           SEQ ID NO:6053	SEO	יטוע תד	6053	TACCOTTNCI.NTSYSVCNG	31
SEQ ID NO:6061         KATMGNTNAIARLRICQFPDNKTLGPTVNDVTTGRNCLFNKAIPAYMRDGKDIVVGITWD 167           SEQ ID NO:6065         PTSGSTYRNMALKGTLLSTLWFKPPFLSDFTNGIFAKVKNTKVIKDGVMYSEFPAITIG 129           SEQ ID NO:60642         VIPKDGIYFAATEKSNVVRGWYFGSTMNNKSQSVIIINNSTMVVIRACMFELCDNPFFA 139           SEQ ID NO:6053        GAYAVVNISSEFNNAGSSSGCTVGIIHGGRVVNASSIAMTAP	~				
SEQ ID NO:6065         PTSGSTYRNMALKGTLLLSTLWFKPPFLSDFTNGIFAKVKNTKVIKDGVMYSEFPAITIG 129           SEQ ID NO:6069         PVDGSKPRNLALTGTNSVSLSWPQPPYLSQFNDGIFAKVQNLKTSTPSGATAYFPTIVIG 131           SEQ ID NO:6042         VIPFKDGIYFAATEKSNVVRGWVFGSTMNNKSQSVIIINNSTNVVIRACNFELCDNPFFA 139           SEQ ID NO:6072        GAYAVVNISSEFNNAGSSSGCTVGIIHGGRVVNASSIAMTAP					
SEQ ID NO:6069         PVDGSKFRNLALTGTNSVSLSWFQPPYLSQFNDGIFAKVQNLKTSTPSGATAYFPTIVIG         131           SEQ ID NO:6072         VIPFRDGIYFAATEKSNVVRGWVFGSTMNNKSQSVIIINNSTNVVIRACNFELCDNPFFA         139           SEQ ID NO:6072	-			1 <del>-</del>	
SEQ ID NO:6072        GAYAVVNISSEFNNAGSSSGCTVGIIHGGRVVNASSIAMTAP					
SEQ ID NO:6053					
SEQ ID NO:6057         LQWFADEVVAYLHGASYRISFENQWSGTVTFGDMRATTLEVAGTLVDLWWFNPVYDVSYY 240           SEQ ID NO:6061        NDRVTVFADKIYHFYLKNDWSRVATRCYNRRSCAMQYVYTPTYYMLN 214           SEQ ID NO:6065	SEQ	ID NO:	:6072	GAYAVVNISSEFNNAGSSSGCTVGIIHGGRVVNASSIAMTAP	88
SEQ ID NO:6057         LQWFADEVVAYLHGASYRISFENQWSGTVTFGDMRATTLEVAGTLVDLWWFNPVYDVSYY 240         240           SEQ ID NO:6061        NDRVTVFADKIYHFYLKNDWSRVATRCYNRRSCAMQYVYTPTYYMLN 214           SEQ ID NO:6065        NDRVTVFADKIYHFYLKNDWSRVATRCYNRRSCAMQYVYTPTYYMLN 214           SEQ ID NO:6066				•	
SEQ ID NO:6061        NDRVTVFADKIYHFYLKNDWSRVATRCYNRRSCAMQYVYTPTYYMLN					
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SEQ ID NO:6061 VTSAGEDGIYYEPCTANCTGYAANVFATDSNGHIPEGFSFNNWFLLSNDSTLLHGKVVSN 274 SEQ ID NO:6065 ICNPN-LGNQRVELWHWDTGVVSCLYKRNFTYDVNADYLYFHFYQEGGTFYAYFTDTGVV 230 SEQ ID NO:6069 DCKPNTNGNKLIGFWHTDVKPPICVLKRNFTLNVNADAFYFHFYQHGGTFYAYYADKPSA 225 SEQ ID NO:6042 -CTFEYISDAFSLDVSEKSGNFKHLREFVFKNKDGFLYVYKGYQPIDVVRDLPSGFNTLK 217 SEQ ID NO:6072SSGMAWSSSQFCTAHCNFSDTTVFVTHCYKHGGCPLTGMLQQN 131 SEQ ID NO:6053 QPLLLNCLWSVSGLRFTTGFVYFNGTGRGDCKGFSSDVLSDVIRYNLNFEENLRRGT 131 SEQ ID NO:6057 QPLLVNCLWPVPSFEEAASTFCFEGAGFDQCNGAVLNNTVDVIRFNLNFTTNVQSGKGAT 360 SEQ ID NO:6061 QPLLVNCLLAIPKIYGLGQFFSFNHTMDGVCNGAAVDRAPEALRFNINDTSVILAEGS 332 SEQ ID NO:6065 TKFLFNVYLGTVLSHYYVMPLTCNSALTLEYWVTPLTSKQYLLAFNQDGVIFNAVD 286 SEQ ID NO:6069 TTFLFSVYIGDILTQYYVLPFICNPTAGSTFAPRYWVTPLVKRQYLFNFNQKGVITSAVD 285					
SEQ ID NO:6069  CKPNTNGNKLIGFWHTDVKPPICVLKRNFTLNVNADAFYFHFYQHGGTFYAYYADKPSA 225  SEQ ID NO:6042  CTFEYISDAFSLDVSEKSGNFKHLREFVFKNKDGFLYVYKGYQPIDVVRDLPSGFNTLK 217  CTFEYISDAFSLDVSEKSGNFKHLREFVFKNKDGFLYVYKGYQPIDVVRDLPSGFNTLK 217  CTFEYISDAFSLDVSEKSGNFKHLREFVFKNKDGFLYVYKGYQPIDVVRDLPSGFNTLK 217  CTFEYISDAFSLDVSEKSGNFKHLREFVFKNKDGFLYVYKGYQPIDVVRDLPSGFNTLK 217  CTFEYISDAFSLDVSEKSGNFKHLREFVFKNKDGFLYVYKGYQPIDVVRDLPSGFNTLK 217  CTFEYISDAFSLDVSEKSGNFKHLREFVFKNKDGFLYVYKHGGCPLTGMLQQN 131  SEQ ID NO:6063  QPLLLNCLWSVSGLRFTTGFVYFNGTGRGDCKGFSSDVLSDVIRYNLNFEENLRRGT 131  SEQ ID NO:6065  QPLLVNCLWPVPSFEEAASTFCFEGAGFDQCNGAVLNNTVDVIRFNLNFTTNVQSGKGAT 360  QPLLVNCLLAIPKIYGLGQFFSFNHTMDGVCNGAAVDRAPEALRFNINDTSVILAEGS 332  SEQ ID NO:6065  TKFLFNVYLGTVLSHYYVMPLTCNSALTLEYWVTPLTSKQYLLAFNQDGVIFNAVD 286  SEQ ID NO:6069  TTFLFSVYIGDILTQYYVLPFICNPTAGSTFAPRYWVTPLVKRQYLFNFNQKGVITSAVD 285	SEQ	ID NO:	:6061		
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SEQ ID NO:6072SSGMAWSSSQFCTAHCNFSDTTVFVTHCYKHGGCPLTGMLQQN 131  SEQ ID NO:6053 QPLLLNCLWSVSGLRFTTGFVYFNGTGRGDCKGFSSDVLSDVIRYNLNFEENLRRGT 131  SEQ ID NO:6057 QPLLVNCLWPVPSFEEAASTFCFEGAGFDQCNGAVLNNTVDVIRFNLNFTTNVQSGKGAT 360  SEQ ID NO:6061 QPLLVNCLLAIPKIYGLGQFFSFNHTMDGVCNGAAVDRAPEALRFNINDTSVILAEGS 332  SEQ ID NO:6065 TKFLFNVYLGTVLSHYYVMPLTCNSALTLEYWVTPLTSKQYLLAFNQDGVIFNAVD 286  SEQ ID NO:6069 TTFLFSVYIGDILTQYYVLPFICNPTAGSTFAPRYWVTPLVKRQYLFNFNQKGVITSAVD 285				DCKPNTNGNKLIGFWHTDVKPPICVLKRNFTLNVNADAFYFHFYQHGGTFYAYYADKPSA	225
SEQ ID NO:6053 QPLLLNCLWSVSGLRFTTGFVYFNGTGRGDCKGFSSDVLSDVIRYNLNFEENLRRGT 131 SEQ ID NO:6057 QPLLVNCLWPVPSFEEAASTFCFEGAGFDQCNGAVLNNTVDVIRFNLNFTTNVQSGKGAT 360 SEQ ID NO:6061 QPLLVNCLLAIPKIYGLGQFFSFNHTMDGVCNGAAVDRAPEALRFNINDTSVILAEGS 332 SEQ ID NO:6065 TKFLFNVYLGTVLSHYYVMPLTCNSALTLEYWVTPLTSKQYLLAFNQDGVIFNAVD 286 SEQ ID NO:6069 TTFLFSVYIGDILTQYYVLPFICNPTAGSTFAPRYWVTPLVKRQYLFNFNQKGVITSAVD 285				·-	
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SEQ ID NO:6057 QPLLVNCLWPVPSFEEAASTFCFEGAGFDQCNGAVLNNTVDVIRFNLNFTTNVQSGKGAT 360 SEQ ID NO:6061 QPLLVNCLLAIPKIYGLGQFFSFNHTMDGVCNGAAVDRAPEALRFNINDTSVILAEGS 332 SEQ ID NO:6065 TKFLFNVYLGTVLSHYYVMPLTCNSALTLEYWVTPLTSKQYLLAFNQDGVIFNAVD 286 SEQ ID NO:6069 TTFLFSVYIGDILTQYYVLPFICNPTAGSTFAPRYWVTPLVKRQYLFNFNQKGVITSAVD 285	ara	TD 375	6053		101
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SEQ	ID NO:6072	LIRVSAMKNGQLFYNLTVSVAKYPTFRSFQCVNNLTSVYLNGDLVYTSNETIDVTSAGVY	191
SEQ SEQ SEQ SEQ	ID NO:6053 ID NO:6057 ID NO:6061 ID NO:6065 ID NO:6069 ID NO:6042 ID NO:6072	ILFKTSYGVVVFYCTNNT-LVSGDAHIPFGTVLGNFYCFVNTTIGNETTSAFVGAL VFSLNTTGGVTLEISCYTVSDS-SFFSYGEIPFGVTDGPRYCYVHYNGTALKYLGTL IVLHTALGTNLSFVCSNSSDPHLAIFAIPLGATEVPYYCFLKVDTYNSTVYKFLAVL CKSDFMSEIKCKTLSIAPSTGVYELNGYTVQPIADVYRRIPNLPDCN-IEAWLNDKSVPS CASSYTSEIKCKTQSMLPSTGVYELSGYTVQPVGVVYRRVANLPACN-IEEWLTARSVPS CSQNPLAELKCSVKSFEIDKGIYQTSNFRVVPSGDVVR-FPNITNLCPFGEVFNATKFPS FKAGGPITYKVMREVKALAYFVNGTAQDVILCDGSPRGLLACQYNTGNFSDGFYPFTNSS	416 389 345 344 <b>336</b>
SEQ SEQ SEQ SEQ	ID NO:6053 ID NO:6057 ID NO:6061 ID NO:6065 ID NO:6069 ID NO:6042 ID NO:6072	PKTVREFVISRTGHFYINGYRYFTLGNVEAVNFNVTTAETTDFCTVALASYADVLV PPSVKEIAISKWGHFYINGYNFFSTFPIDCISFNLTTGDSDVFWTIAYTSYTEALV PPTVREIVITKYGDVYVNGFGYLHLGLLDAVTINFTGHGTDDDVSGFWTIASTNFVDALI PLNWERKTFSNCNFNMSSLMSFIQAYSFTCNNIDAAKIYGMCFSSITIDKFAIPNG PLNWERKTFQNCNFNLSSLLRYVQAESLFCNNIDASKVYGRCFGSISVDKFAVPRS VYAWERKKISNCVADYSVLYNSTFFSTFKCYGVSATKLNDLCFSNVYADSFVVKGD LVKQKFIVYRENSVNTTCTLHNFIFHNETGANPNPSGVQNIQTYQTKTAQSGYYNFNF	472 449 401 400
SEQ SEQ SEQ SEQ	ID NO:6053 ID NO:6057 ID NO:6061 ID NO:6065 ID NO:6069 ID NO:6042 ID NO:6072	NVSQTSIANIIYCNSVINRLRCDQLSFDVPDGFYSTSPIQSVELPVSIVSLPVYHKHT QVENTAITKVTYCNSHVNNIKCSQITANLNNGFYPVSSSEVGLVNKSVVLLPSFYTHT EVQGTSIQRILYCDDPVSQLKCSQVAFDLDDGFYPISSRNLLSHEQPISFVTLPSFNDHS RKVDLQLGNLGYLQSFNYRIDTTATSCQLYYNLPAANVSVSRFNPSTWNRRFGFTEQS RQVDLQLGNSGFLQTANYKIDTAATSCQLHYTLPKNNVTINNHNPSSWNRRYGFNDAG DVRQIAPGQTGVIADYNYKLPDDFMGCVLAWNTRNIDATSTGNYNYKYRYLRHG SFLSSFVYKESNFMYGSYHPSCKFRLETINNGLWFNSLSVSIAYGPLQGGCKQS : : : :	530 509 459 458 <b>446</b>
SEQ SEQ SEQ SEQ	ID NO:6053 ID NO:6057 ID NO:6061 ID NO:6065 ID NO:6069 ID NO:6042 ID NO:6072	FIVLYVDFKPQ-SGGGKCFNCYPAGVNITLANFNETKGPLCVDTSHFTTKYVAVYAN IVNITIGLGMKRSGYGQPIASTLSNITLPMQDHNTDVYCIRSDQFS-VYVHSTCK FVNITVSAAFGGLSSANLVASDTTINGFSSFCVDTRQFTITLFYNVTN VFKPQPAGVFTDHDVVYAQHCFKASTNFCPCKLDGSLCVGNGPGIDAGYKTSGIGTCPAG VFGKNQHDVVYAQQCFTVRSSYCPC	584 557 519 483 <b>453</b>
SEQ SEQ SEQ SEQ	ID NO:6053 ID NO:6057 ID NO:6061 ID NO:6065 ID NO:6069 ID NO:6042 ID NO:6072	VGRWSASINTGNCPFSFGKVNNFVKFGSVCFSLKDIPGGCAMPIVA SALWDNIFKRNCTDVLDATAVIKTGTCPFSFDKLNNYLTFNKFCLSLSPVGANCKFDVAA SYGYVSKSQDSNCPFTLQSVNDYLSFSKFCVSTSLLAGACTIDLFG TNYLTCHNAAQCDCLCTPDPITSKATGPYKCPQTKYLVGIGEHCSGLAIKSDHCGGAQPDIVSPCTTQTKPKSAFVNVGDHCEGLGVLEDNCGNADPH	644 603 575 525 <b>480</b>
SEQ SEQ SEQ SEQ	ID NO:6053 ID NO:6057 ID NO:6061 ID NO:6065 ID NO:6069 ID NO:6042 ID NO:6072	NWAYSKYYTIGSLYVSWSDGDGITGVPQPVEGVSSFMNVTLDKC -RTRTNEQVVRSLYVIYEEGDNIVGVPSDNSGVHDLSVLHLDSC YPAFGSGVKLTSLYFQFTKGELITGTPKPLEGITDVSFMTLDVC NPCTCQPQAFLGWSVDSCLQGDRCNIFANFILHDVNSGTTCSTDLQKSNTDIILGVC KGCICANNSFIGWSHDTCLVNDRCQIFANILLNGINSGTTCSTDLQLPNTEVVTGIC YGFYTTTGIGYQPYRVVVLSFELLNAPATVCGPKLSTDLIKNQC LVYVTKSGGSRIQTATEPPVITQNNYNNITLNTC	687 647 632 582 <b>524</b>

SEO ID NO:6053 TKYNIYDVSGVGVIRVSNDTFLN-----GITYTSTSGNLLGFKDVTKGTIYSITPC 497 SEO ID NO:6057 TDYNIYGRTGVGIIRQTNRTLLS-----GLYYTSLSGDLLGFKNVSDGVIYSVTPC 738 SEQ ID NO:6061 TKYTIYGFKGEGIITLTNSSILA-----GVYYTSDSGQLLAFKNVTSGAVYSVTPC 698 VNYDLYGITGQGIFVEVNATYYNS-----WQNLLYDSNGNLYGFRDYLTNRTFMIRSC 685 SEQ ID NO:6065 VKYDLYGITGQGVFKEVKADYYNS------WQTLLYDVNGNLNGFRDLTTNKTYTIRSC 635 SEQ ID NO:6069 VNFNFNGLTGTGVLTPSSKRFQP-----FQQFGRDVSDFTDSVRDPKTSEILDISPC 576 SEQ ID NO:6042 VDYNIYGRTGQGFITNVTDSAVSYNYLADAGLAILDTSGSIDIFVVQGEYGLNYYKVNPC 493 SEQ ID NO:6072 ..: : . .\* \*.: SEQ ID NO:6053 NPPDQLVVYQQA--VVGAMLSENFTSYGFSNVVELPKFFYASNGTYN----- 542 SEQ ID NO:6057 DVSAOAAVIDGT--IVGAITSINSELLGLTHWTTTPNFYYYSIYNYTNDRTRGTAIDSND 796 SEQ ID NO:6061 SFSEQAAYVNDD--IVGVISSLSNS--TFNNTRELPGFFYHSNDGSN----- 741 SEQ ID NO:6065 YSGRVSAAFHAN--SSEPALLFRNIKCNYVFNNTLSRQLQPINYFDSYLGCVVNADNSTS 743 SEQ ID NO:6069 YSGRVSAAFHKD--APEPALLYRNINCSYVFSNNISREENPLNYFDSYLGCVVNADNRTD 693 AFGGVSVITPGTNASSEVAVLYQDVNCTDVSTAIHADQLTPAWRIYSTGNNVFQTQAGCL 636 SEQ ID NO:6042 SEO ID NO:6072 EDVNQQFVVSGGK-LVGILTSRNETGSQLLENOFYIKITNGTRRFRRSITEN---- 544 SEQ ID NO:6053 -CTDAVLTYSSFGVCADGS-----IIAVQPRNVSYDSVSAIVTAN-----LSI 584 SEQ ID NO: 6057 VDCEPVITYSNIGVCKNGA-----FVFINVTHSDGD-VQPISTGN------VTI 838 SEQ ID NO:6061 -CTEPVLVYSNIGVCKSGS-----IGYVPSQYGQVK-IAPTVTGN-----ISI 782 SEQ ID NO:6065 SVVQTCDLTVGSGYCVDYSTKRRSRRSITTGYRFTNFEPFTVNSVNDSLEPVGGLYEIQI 803 EALPNCDLRMGAGLCVDYSKSRRADRSVSTGYRLTTFEPYTPMLVNDSVQSVDGLYEMQI 753 SEQ ID NO:6069 SEQ ID NO:6042 IGAEHVDTSYECDIPIGAGICASYHTVSLLRSTSQKSIVAYTMSLGADSSIAYSNNTIAI 696 SEQ ID NO:6072 VANCPYVSYGKFCIKPDGS-----IATIVPKQLEQFVAPLFNVTEN-----VLI 588 SEQ ID NO:6053 PSNWTTSVQVEYLQITSTPIVVDCSTYVCNGNVRCVELLKQYTSACKTIEDALRNSARLE 644 SEQ ID NO:6057 PTNFTISVQVEYIQVYTTPVSIDCSRYVCNGNPRCNKLLTQYVSACQTIEQALAMGARLE 898 SEQ ID NO:6061 PTNFSMSIRTEYLQLYNTPVSVDCATYVCNGNSRCKQLLTQYTAACKTIESALQLSARLE 842 SEQ ID NO:6065 PSEFTIGNMEEFIQTSSPKVTIDCSAFVCGDYAACKSQLVEYGSFCDNINAILTEVNELL 863 SEO ID NO:.6069 PTNFTIGHHEEFIQTRSPKVTIDCAAFVCGDNTACROOLVEYGSFCVNVNAILNEVNNLL 813 SEQ ID NO:6042 PTNFSISITTEVMPVSMAKTSVDCNMYICGDSTECANLLLQYGSFCTQLNRALSGIAAEQ 756 SEQ ID NO:6072 PNSFNLTVTDEYIQTRMDKVQINCLQYVCGSSLDCRKLFQQYGPVCDNILSVVNSVGQKE 648 ::\* ::\*.. \* . : : \* . \* : SEO ID NO:6053 SADVSEMLTFDKKAFTLANVSSFGDYN----------LSSVIPSLPTSGS---- 684 SEO ID NO:6057 NMEVDSMLFVSENALKLASVEAFNSSETLDPIYKEWPNIGGSWLEGLKYILPSHNS---- 954 SEQ ID NO:6061 SVEVNSMLTISEEALQLATISSFNGDG------YNFTNVLGASVYDPASGR---- 887 SEQ ID NO:6065 DTTQLQVANSLMNGVTLSTKLKDGVNFN------VDDINFSPVLGCLGSDCN---- 909 SEQ ID NO:6069 DNMQLQVASALMQGVTISSRLPDGISGP-----IDDINFSPLLGCIGSTCAEDGN 863 SEQ ID NO:6042 DRNTREVFAQVKQMYKTPTLKYFGGFN------FSQILPDPLKPTK---- 796 SEQ ID NO:6072 DMELLNFYSSTKPAGFNTPVLSNVSTG-----EFNISLLLTNPSSRRK---- 691 SEO ID NO:6053 ---RVAGRSAIEDILFSKLVTSGLGTVDADYKKCTKGLS--IADLACAOYYNGIMVLPGV 739 SEQ ID NO:6057 ---KRKYRSAIEDLLFDKVVTSGLGTVDEDYKRCTGGYD--IADLVCAQYYNGIMVLPGV 1009 SEO ID NO:6061 ---VVQKRSVIEDLLFNKVVTNGLGTVDEDYKRCSNGRS--VADLVCAQYYSGVMVLPGV 942 SEQ ID NO:6065 ---KVSSRSAIEDLLFSKVKLSDVG-FVEAYNNCTGGAE--IRDLICVQSYNGIKVLPPL 963 SEQ ID NO:6069 GPSAIRGRSAIEDLLFDKVKLSDVG-FVEAYNNCTGGQE--VRDLLCVQSFNGIKVLPPV 920 SEQ ID NO:6042 -----RSFIEDLLFNKVTLADAG-FMKQYGECLGDIN--ARDLICAQKFNGLTVLPPL 846 -----RSLIEDLLFTSVESVGLP-TNDAYKNCTAGPLGFFKDLACAREYNGLLVLPPI 743 SEQ ID NO:6072 

שרכו	ID NO:6053	ADAERMAMYTGSLIGGIALGGLTSAVSIPFSLAIQARLNYVALQTDVLQENQKILA	795
SEQ	ID NO:6057	ANADKMTMYTASLAGGITLGALGGGAVAIPFAVAVQARLNYVALQTDVLNKNQQILA	
SEQ	ID NO:6061	VDAEKLHMYSASLIGGMALGGITAAAALPFSYAVQARLNYLALQTDVLQRNQQLLA	998
SEQ	ID NO:6065	LSENQISGYTLAATSASLFPPWSAAAGVPFYLNVQYRINGIGVTMDVLSQNQKLIA	
SEQ	ID NO:6069	LSESQISGYTTGATAAAMFPPWSAAAGVPFSLSVQYRINGLGVTMNVLSENQKMIA	
SEQ	ID NO:6042	LTDDMIAAYTAALVSGTATAGWTFGAGAALQIPFAMQMAYRFNGIGVTQNVLYENQKQIA	
SEQ	ID NO:6072	ITAEMQALYTSSLVASMAFGGITAAGAIPFATQLQARINHLGITQSLLLKNQEKIA	799
		. *: * :** : *:* :: :* :*	
		*	
SEQ	ID NO:6053	ASFNKAMTNIVDAFTGVNDAITQTSQALQTVATALNKIQDVVNQQGNSLNHLTSQLRQNF	855
SEQ	ID NO:6057	SAFNQAIGNITQSFGKVNDAIHQTSRGLATVAKALAKVQDVVNIQGQALSHLTVQLQNNF	1126
SEQ	ID NO:6061	ESFNSAIGNITSAFESVKEAISQTSKGLNTVAHALTKVQEVVNSQGSALNQLTVQLQHNF	1058
SEQ	ID NO:6065	NAFNNALGAIQEGFDATNSALVKIQAVVNANAEALNNLLQQLSNRF	1065
	ID NO:6069	SAFNNALGAIQDGFDATNSALGKIQSVVNANAEALNNLLNQLSNRF	1022
	ID NO:6042	NQFNKAISQIQESLTTTSTALGKLQDVVNQNAQALNTLVKQLSSNF	952
	ID NO:6072	ASFNKAIGHMQEGFRSTSLALQQIQDVVSKQSAILTETMASLNKNF	845
~- £		**.*: :	
SEO	ID NO:6053	QAISSSIQAIYDRLDTIQADQQVDRLITGRLAALNVFVSHTLTKYTEVRASRQLAQQKVN	915
	ID NO:6057	QAISSSISDIYNRLDELSADAQVDRLITGRLTALNAFVSQTLTRQAEVRASRQLAKDKVN	
-	ID NO:6061	QAISSSIDDIYSRLDILSADVQVDRLITGRLSALNAFVAQTLTKYTEVQASRKLAQQKVN	
	ID NO:6065	GAISSSLOEILSRLDALEAQAQIDRLINGRLTALNAYVSQQLSDSTLVKFSAAQAMEKVN	
	ID NO:6069	GAISASLQEILTRLEAVEAKAQIDRLINGRLTALNAYISKQLSDSTLIKVSAAQAIEKVN	
	ID NO:6042	GAISSVLNDILSRLDKVEAEVQIDRLITGRLQSLQTYVTQQLIRAAEIRASANLAATKMS	1012
	ID NO:6072	GAISSVIQEIYQQFDAIQANAQVDRLITGRLSSLSVLASAKQAEYIRVSQQRELATQKIN	905
SEQ	TD NO:00/2	***: : * ::: : : * ::: : * * *::  GAIDSVIQEIIQQFDAIQANAQVDRDIIGRESSESVEASANQAEIIRVSQQREDAIQAIN	903
		***************************************	
			0.00
SEO	TD NO:6053	FUVKSOSKKYGECG-NGTHIESIVNAAFEGDVEDHIVDDETOXKDVEAWSGDCVDG	970
	ID NO:6053	ECVKSQSKRYGFCG-NGTHIFSIVNAAPEGLVFLHTVLLPTQYKDVEAWSGLCVDG ECVRSOSORFGFCG-NGTHLFSIANAAPNGMTFFHTVLLPTAYETVTAWPGTCASDG-DR	
SEQ	ID NO:6057	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR	1244
SEQ SEQ	ID NO:6057 ID NO:6061	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG	1244 1174
SEQ SEQ SEQ	ID NO:6057 ID NO:6061 ID NO:6065	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG	1244 1174 1180
SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6061 ID NO:6065 ID NO:6069	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG	1244 1174 1180 1137
SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6061 ID NO:6065 ID NO:6069 ID NO:6042	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVLGQSKRVDFCG-KGYHLMSFPQAAPHGVVFLHVTYVPSQERNFTTAPAICHEG	1244 1174 1180 1137 <b>1067</b>
SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6061 ID NO:6065 ID NO:6069	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVLGQSKRVDFCG-KGYHLMSFPQAAPHGVVFLHVTYVPSQERNFTTAPAICHEG ECVKSQSIRYSFCG-NGRHVLTIPQNAPNGIVFIHFSYTPDSFVNVTAIVGFCVKPANAS	1244 1174 1180 1137 <b>1067</b>
SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6061 ID NO:6065 ID NO:6069 ID NO:6042	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVLGQSKRVDFCG-KGYHLMSFPQAAPHGVVFLHVTYVPSQERNFTTAPAICHEG	1244 1174 1180 1137 <b>1067</b>
SEQ SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6061 ID NO:6065 ID NO:6069 ID NO:6042 ID NO:6072	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVLGQSKRVDFCG-KGYHLMSFPQAAPHGVVFLHVTYVPSQERNFTTAPAICHEG ECVKSQSIRYSFCG-NGRHVLTIPQNAPNGIVFIHFSYTPDSFVNVTAIVGFCVKPANAS *** .*: * .*** . * *:::: : ** *: *: *:*	1244 1174 1180 1137 <b>1067</b> 964
SEQ SEQ SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6061 ID NO:6065 ID NO:6069 ID NO:6072 ID NO:6053	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVLGQSKRVDFCG-KGYHLMSFPQAAPHGVVFLHVTYVPSQERNFTTAPAICHEG ECVKSQSIRYSFCG-NGRHVLTIPQNAPNGIVFIHFSYTPDSFVNVTAIVGFCVKPANAS *** .*: * .*** .* *:::: : ** *: *: *::* TNGYVLRQPNLALYKEGNYYRITSRIMFEPRIPTMADFVQIENCNVTFVNISRS	1244 1174 1180 1137 <b>1067</b> 964
SEQ SEQ SEQ SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6061 ID NO:6065 ID NO:6069 ID NO:6072 ID NO:6053 ID NO:6057	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVLGQSKRVDFCG-KGYHLMSFPQAAPHGVVFLHVTYVPSQERNFTTAPAICHEG ECVKSQSIRYSFCG-NGRHVLTIPQNAPNGIVFIHFSYTPDSFVNVTAIVGFCVKPANAS *** .*: * .*** .* *:::: : ** *: *:*  TNGYVLRQPNLALYKEGNYYRITSRIMFEPRIPTMADFVQIENCNVTFVNISRS TFGLVVKDVQLTLFRNLDDKFYLTPRTMYQPRVATSSDFVQIEGCDVLFVNATVS	1244 1174 1180 1137 <b>1067</b> 964 1024 1299
SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6065 ID NO:6069 ID NO:6042 ID NO:6072  ID NO:6053 ID NO:6057 ID NO:6061	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVLGQSKRVDFCG-KGYHLMSFPQAAPHGVVFLHVTYVPSQERNFTTAPAICHEG ECVKSQSIRYSFCG-NGRHVLTIPQNAPNGIVFIHFSYTPDSFVNVTAIVGFCVKPANAS *** .* : * .* ** .* * :::: : ** * :: *	1244 1174 1180 1137 <b>1067</b> 964 1024 1299 1234
SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6065 ID NO:6069 ID NO:6042 ID NO:6072  ID NO:6053 ID NO:6057 ID NO:6061 ID NO:6065	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVLGQSKRVDFCG-KGYHLMSFPQAAPHGVVFLHVTYVPSQERNFTTAPAICHEG ECVKSQSIRYSFCG-NGRHVLTIPQNAPNGIVFIHFSYTPDSFVNVTAIVGFCVKPANAS *** .** * .*** .* * :::: : ** * :: * *:*  TNGYVLRQPNLALYKEGNYYRITSRIMFEPRIPTMADFVQIENCNVTFVNISRS TFGLVVKDVQLTLFRNLDDKFYLTPRTMYQPRVATSSDFVQIEGCDVLFVNATVS EIALTLREPGLVLFTHELQTYTATEYFVSSRRMFEPRKPTVSDFVQIESCVVTYVNLTSD DRGIAPKSGYFVNVNNTWMFTGSGYYYPEPITGNNVVVMSTCAVNYTKAPDV	1244 1174 1180 1137 <b>1067</b> 964 1024 1299 1234 1232
SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6061 ID NO:6069 ID NO:6042 ID NO:6072 ID NO:6053 ID NO:6057 ID NO:6061 ID NO:6065 ID NO:6065	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVLGQSKRVDFCG-KGYHLMSFPQAAPHGVVFLHVTYVPSQERNFTTAPAICHEG ECVKSQSIRYSFCG-NGRHVLTIPQNAPNGIVFIHFSYTPDSFVNVTAIVGFCVKPANAS *** .* : * .* * .* * : : : * * * : *  TNGYVLRQPNLALYKEGNYYRITSRIMFEPRIPTMADFVQIENCNVTFVNISRS TFGLVVKDVQLTLFRNLDDKFYLTPRTMYQPRVATSSDFVQIEGCDVLFVNATVS EIALTLREPGLVLFTHELQTYTATEYFVSSRRMFEPRKPTVSDFVQIESCVVTYVNLTSD DRGIAPKSGYFVNVNNTWMFTGSGYYYPEPITGNNVVVMSTCAVNYTKAPDV DRGLAPKAGYFVQDDGEWKFTGSSYYYPEPITDKNSVIMSSCAVNYTKAPEV	1244 1174 1180 1137 <b>1067</b> 964 1024 1299 1234 1232 1189
SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6061 ID NO:6069 ID NO:6042 ID NO:6072 ID NO:6053 ID NO:6057 ID NO:6061 ID NO:6065 ID NO:6069 ID NO:6069 ID NO:6042	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVLGQSKRVDFCG-KGYHLMSFPQAAPHGVVFLHVTYVPSQERNFTTAPAICHEG ECVKSQSIRYSFCG-NGRHVLTIPQNAPNGIVFIHFSYTPDSFVNVTAIVGFCVKPANAS *** .*: * .*** .* *:::: ** *: *: *:*  TNGYVLRQPNLALYKEGNYYRITSRIMFEPRIPTMADFVQIENCNVTFVNISRS TFGLVVKDVQLTLFRNLDDKFYLTPRTMYQPRVATSSDFVQIEGCDVLFVNATVS EIALTLREPGLVLFTHELQTYTATEYFVSSRRMFEPRKPTVSDFVQIESCVVTYVNLTSD DRGIAPKSGYFVNVNNTWMFTGSGYYYPEPITGNNVVVMSTCAVNYTKAPDV DRGLAPKAGYFVQDDGEWKFTGSSYYYPEPITDKNSVIMSSCAVNYTKAPEV -KAYFPREGVFVFNGTSWFITQRNFFSPQIITTDNTFVSGNCDVVIGIINNT	1244 1174 1180 1137 <b>1067</b> 964 1024 1299 1234 1232 1189 <b>1118</b>
SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6061 ID NO:6069 ID NO:6042 ID NO:6072 ID NO:6053 ID NO:6057 ID NO:6061 ID NO:6065 ID NO:6065	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQSTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVLGQSKRVDFCG-KGYHLMSFPQAAPHGVVFLHVTYVPSQERNFTTAPAICHEG ECVKSQSIRYSFCG-NGRHVLTIPQNAPNGIVFIHFSYTPDSFVNVTAIVGFCVKPANAS *** .** * .** * .** **  TNGYVLRQPNLALYKEGNYYRITSRIMFEPRIPTMADFVQIENCNVTFVNISRS TFGLVVKDVQLTLFRNLDDKFYLTPRTMYQPRVATSSDFVQIEGCDVLFVNATVS EIALTLREPGLVLFTHELQTYTATEYFVSSRRMFEPRKPTVSDFVQIESCVVTYVNLTSD DRGIAPKSGYFVNVNNTWMFTGSGYYYPEPITGNNVVVMSTCAVNYTKAPDV DRGLAPKAGYFVQDDGEWKFTGSSYYYPEPITDKNSVIMSSCAVNYTKAPEV -KAYFPREGVFVFNGTSWFITQRNFFSPQIITTDNTFVSGNCDVVIGIINNT QYAIVPANGRGIFIQVNGSYYITARDMYMPRAITAGDVVTLTSCQANYVSVNKT	1244 1174 1180 1137 <b>1067</b> 964 1024 1299 1234 1232 1189 <b>1118</b>
SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6061 ID NO:6069 ID NO:6042 ID NO:6072 ID NO:6053 ID NO:6057 ID NO:6061 ID NO:6065 ID NO:6069 ID NO:6069 ID NO:6042	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVLGQSKRVDFCG-KGYHLMSFPQAAPHGVVFLHVTYVPSQERNFTTAPAICHEG ECVKSQSIRYSFCG-NGRHVLTIPQNAPNGIVFIHFSYTPDSFVNVTAIVGFCVKPANAS *** .*: * .*** .* *:::: ** *: *: *:*  TNGYVLRQPNLALYKEGNYYRITSRIMFEPRIPTMADFVQIENCNVTFVNISRS TFGLVVKDVQLTLFRNLDDKFYLTPRTMYQPRVATSSDFVQIEGCDVLFVNATVS EIALTLREPGLVLFTHELQTYTATEYFVSSRRMFEPRKPTVSDFVQIESCVVTYVNLTSD DRGIAPKSGYFVNVNNTWMFTGSGYYYPEPITGNNVVVMSTCAVNYTKAPDV DRGLAPKAGYFVQDDGEWKFTGSSYYYPEPITDKNSVIMSSCAVNYTKAPEV -KAYFPREGVFVFNGTSWFITQRNFFSPQIITTDNTFVSGNCDVVIGIINNT	1244 1174 1180 1137 <b>1067</b> 964 1024 1299 1234 1232 1189 <b>1118</b>
SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6061 ID NO:6069 ID NO:6042 ID NO:6072 ID NO:6053 ID NO:6057 ID NO:6061 ID NO:6065 ID NO:6069 ID NO:6069 ID NO:6069	ECVRSQSQRYGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVLGQSKRVDFCG-KGYHLMSFPQAAPHGVVFLHVTYVPSQERNFTTAPAICHEG ECVKSQSIRYSFCG-NGRHVLTIPQNAPNGIVFIHFSYTPDSFVNVTAIVGFCVKPANAS *** .*: * .*** .* * .:: : ** * : * .: *  TNGYVLRQPNLALYKEGNYYRITSRIMFEPRIPTMADFVQIENCNVTFVNISRS TFGLVVKDVQLTLFRNLDDKFYLTPRTMYQPRVATSSDFVQIEGCDVLFVNATVS EIALTLREPGLVLFTHELQTYTATEYFVSSRRMFEPRKPTVSDFVQIESCVVTYVNLTSD DRGIAPKSGYFVNVNNTWMFTGSGYYYPEPITGNNVVVMSTCAVNYTKAPDV DRGLAPKAGYFVQDDGEWKFTGSSYYYPEPITDKNSVIMSSCAVNYTKAPEV -KAYFPREGVFVFNGTSWFITQRNFFSPQIITTDNTFVSGNCDVVIGIINNT QYAIVPANGRGIFIQVNGSYYITARDMYMPRAITAGDVVTLTSCQANYVSVNKT . : : * . * : . * . * .	1244 1174 1180 1137 <b>1067</b> 964 1024 1299 1234 1232 1189 <b>1118</b>
SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6061 ID NO:6069 ID NO:6042 ID NO:6072 ID NO:6053 ID NO:6057 ID NO:6061 ID NO:6065 ID NO:6069 ID NO:6069 ID NO:6072 ID NO:6072	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVKSQSTRYFCG-NGRHVLTSPQAAPHGVVFLHVTYVPSQERNFTTAPAICHEG ECVKSQSIRYSFCG-NGRHVLTIPQNAPNGIVFIHFSYTPDSFVNVTAIVGFCVKPANAS *** .* : * .* ** .* *	1244 1174 1180 1137 <b>1067</b> 964 1024 1299 1234 1232 1189 <b>1118</b> 1018
SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6065 ID NO:6069 ID NO:6072 ID NO:6053 ID NO:6057 ID NO:6065 ID NO:6065 ID NO:6065 ID NO:6069 ID NO:6072 ID NO:6072	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVKSQSIRYSFCG-NGRHVLTIPQNAPNGIVFIHFSYTPDSFVNVTAIVGFCVKPANAS ***	1244 1174 1180 1137 <b>1067</b> 964 1024 1299 1234 1232 1189 <b>1118</b> 1018
SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6065 ID NO:6069 ID NO:6072 ID NO:6053 ID NO:6057 ID NO:6065 ID NO:6065 ID NO:6069 ID NO:6069 ID NO:6072 ID NO:6072 ID NO:6072 ID NO:6053 ID NO:6072	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVLGQSKRVDFCG-KGYHLMSFPQAAPHGVVFLHVTYVPSQERNFTTAPAICHEG ECVKSQSIRYSFCG-NGRHVLTIPQNAPNGIVFIHFSYTPDSFVNVTAIVGFCVKPANAS ***	1244 1174 1180 1137 <b>1067</b> 964 1024 1299 1234 1232 1189 <b>1118</b> 1018
SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6065 ID NO:6069 ID NO:6042 ID NO:6072 ID NO:6053 ID NO:6057 ID NO:6065 ID NO:6069 ID NO:6069 ID NO:6069 ID NO:6072	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVKSQTTRINFCG-NGHVLTIPQNAPHGVVFLHVTYVPSQERNFTTAPAICHEG ECVKSQSIRYSFCG-NGRHVLTIPQNAPNGIVFIHFSYTPDSFVNVTAIVGFCVKPANAS ***	1244 1174 1180 1137 <b>1067</b> 964 1024 1299 1234 1232 1189 <b>1118</b> 1018
SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6065 ID NO:6069 ID NO:6072 ID NO:6053 ID NO:6057 ID NO:6065 ID NO:6065 ID NO:6065 ID NO:6065 ID NO:6072 ID NO:6065 ID NO:6057 ID NO:6065 ID NO:6057	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVKSQTTRINFCG-NGRHVLTIPQNAPHGVVFLHVTYVPSQERNFTTAPAICHEG ECVKSQSIRYSFCG-NGRHVLTIPQNAPNGIVFIHFSYTPDSFVNVTAIVGFCVKPANAS ***	1244 1174 1180 1137 1067 964 1024 1299 1234 1232 1189 1118 1018 1082 1358 1292 1279 1238
SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6069 ID NO:6042 ID NO:6072 ID NO:6053 ID NO:6057 ID NO:6065 ID NO:6065 ID NO:6069 ID NO:6072 ID NO:6072 ID NO:6072 ID NO:6053 ID NO:6069 ID NO:6057 ID NO:6065 ID NO:6065 ID NO:6065 ID NO:6065 ID NO:6065	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVKSQSRRVDFCG-KGYHLMSFPQAAPHGVVFLHVTYVPSQERNFTTAPAICHEG ECVKSQSIRYSFCG-NGRHVLTIPQNAPNGIVFIHFSYTPDSFVNVTAIVGFCVKPANAS ***	1244 1174 1180 1137 1067 964 1024 1299 1234 1232 1189 1118 1018 1082 1358 1292 1279 1238 1166
SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ SEQ	ID NO:6057 ID NO:6065 ID NO:6069 ID NO:6072 ID NO:6053 ID NO:6057 ID NO:6065 ID NO:6065 ID NO:6065 ID NO:6065 ID NO:6072 ID NO:6065 ID NO:6057 ID NO:6065 ID NO:6057	ECVRSQSQRFGFCG-NGTHLFSLANAAPNGMIFFHTVLLPTAYETVTAWPGICASDG-DR ECVKSQSQRYGFCGGDGEHIFSLVQAAPQGLLFLHTVLVPGDFVNVLAIAGLCVNG ECVKSQSRINFCG-NGNHIISLVQNAPYGLYFIHFSYVPTKYVTAKVSPGLCIAG ECVKSQTTRINFCG-NGNHILSLVQNAPYGLYFIHFSYVPISFTTANVSPGLCISG ECVKSQTTRINFCG-NGRHVLTIPQNAPHGVVFLHVTYVPSQERNFTTAPAICHEG ECVKSQSIRYSFCG-NGRHVLTIPQNAPNGIVFIHFSYTPDSFVNVTAIVGFCVKPANAS ***	1244 1174 1180 1137 1067 964 1024 1299 1234 1232 1189 1118 1018 1082 1358 1292 1279 1238 1166

			03/1/3	
SEQ SEQ SEQ SEQ	ID N	io: 6053 io: 6057 io: 6061 io: 6065 io: 6069 io: 6042 io: 6072	YTVQKLQTLIDNINSTLVDLKWLNRVETYIKWPWWVWLCISVVLIFVVSMLLLCCCSTGC NTTVELAILIDNINNTLVNLEWLNRIETYVKWPWYVWLLIGLVVIFCIPLLLFCCCSTGC NTTEELRSLINNINNTLVDLEWLNRVETYIKWPWWVWLIIVIVLIFVVSLLVFCCISTGCRLQEAIKVLNQSYINLKDIGTYEYYVKWPWYVWLLIGFAGVAMLVLLFFICCCTGCRIQDAIKKLNESYINLKEVGTYEMYVKWPWYVWLLIGLAGVAVCVLLFFICCCTGCRLNEVAKNLNESLIDLQELGKYEQYIKWPWYVWLGFIAGLIAIVMVTILLCCMTSCRIQGVIQGLNDSLIDLEKLSILKTYIKWPWYVWLAIAFATIIFILLIGWVFFMTGC .: :*::::::::::::::::::::::::::::::::::	1418 1352 1335 1294 <b>1222</b>
SEQ SEQ SEQ SEQ	ID N	10:6053 10:6057 10:6061 10:6065 10:6069 10:6042 10:6072	CGFFSCFASSIRGCCESTKLPYYD-VEKIHIQ 1173 CGCIGCLGSCCHSICSRRQFENYEPIEKVHVH 1450 CGCCGCCGCACFSGCCRGPRLQPYEAFEKVHVQ 1384 GTSCFKKCGGCCDDYTGHQELVIKTSHED- 1364 GSCCFKKCGNCCDEYGGHQDSIVIHNISSHED- 1326 CSCLKGACSCG-SCCKFDEDDSEPVLKGVKLHYT- 1255 CGCCCGCFGIMPLMSKCGKKSSYYTTFDNDVVTEQYRPKKSV 1164	
			FIGURE 7B	
 SEQ SEQ SEQ	ID N ID N ID N	TO: 6054 TO: 6062 TO: 6058 TO: 6045 TO: 6073 TO: 6066	MFLKLVDDHA-LVVNVLLWCVVLIVILLVCITIIKLIKLCFTCHMFCNRTVYMLQLVNDNG-LVVNVILWLFVLFFLLIISITFVQLVNLCFTCHRLCNSAVYMTFPRALTVIDDNG-MVINIIFWFLLIIILILLSIALLNIIKLCMVCCNLGRTVIIMYSFVSEETGTLIVNSVLLFLAFVVFLLVTLAILTALRLCAYCCNIVNVSLVMNLLNKSLEENG-SFLTALYIIVGFLALYLLGRALQAFVQAADACCLFWYTWVVMFMADAYFADTVWYVGQIIFIVAICLLVIIVVVAFLATFKLCIQLCGMCNTLVL : : : : : : : : : :	54 59 <b>52</b> 57
SEQ SEQ SEQ	ID N ID N	io:6054 io:6062 io:6058 io:6045 io:6073 io:6066	GPIKNVYH-IY-QSYMHIDPFPKRVIDF 77 TPIGRLYR-VY-KSYMRIDPLPSTVIDV 80 VPAQHAYD-AY-KNFMRIKAYNPDGALLA 86 KPTVYVYS-RV-KNLNSSEGVPDLLV 76 IPGAKGTAFVYKYTYGRKLNNPELEAVIVNEFPKNGWNNKNPANFQDAQRDKLYS 112 SPSIYVFN-RG-RQFYEFYNDVKPPVLDVDDV 84 * : : . *	
			FIGURE 7C	
SEQ SEQ SEQ SEQ	ID N	TO: 6055 TO: 6063 TO: 6059 TO: 6067 TO: 6070 TO: 6046 TO: 6074		24 60 27 33 <b>21</b>
SEQ SEQ SEQ SEQ	ID N ID N ID N	10:6055 10:6063 10:6059 10:6067 10:6070	GWNVILTIFIVILQFGHYKYSRLFYGLKMLVLWLLWPLVLALSIFDTWANWDSN-WAFVA TWNIILTILLVVLQYGHYKYSVFLYGVKMAILWILWPLVLALSIFDAWASFQVN-WVFFA SWSIILIVFITVLQYGRPQFSWFVYGIKMLIMWLLWPVVLALTIFNAYSEYQVSRYVMFG SLGIILLFITVILQFGYTSRSMFVYVIKMVILWLMWPLTIILTIFNCVYALN-NVYLG SLGIILLFITIILQFGYTSRSMFIYVVKMIILWLMWPLTIVLCIFNCVYALN-NVYLG	83 120 84 90

SEQ ID NO:6046 VIGFLFLAWIMLLQFAYSNRNRFLYIIKLVFLWLLWPVTLACFVLA--AVYRIN-WVTGG 78

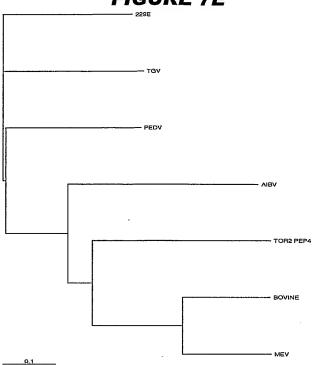
SEQ ID NO:607	4 FITAFLLFLTIILQYGYATRSKVIYTLKMIVLWCFWPLNIAVGVISCTYPPN-TGGLV	85
	:: :**:	
SEQ ID NO:605	5 FSFFMAVSTLVMWVMYFANSFRLFRRARTFWAWNPEVNAITVTTVL-GQTYYQPIQQAPT	137
SEQ ID NO:606	3 FSILMACITLMLWIMYFVNSIRLWRRTHSWWSFNPETDALLTTSVM-GRQVCIPVLGAPT	142
SEQ ID NO:605		
SEQ ID NO:606	~	1/13
SEQ ID NO:607		
SEQ ID NO:604		
SEQ ID NO:607		
2EQ ID 10.007		145
	:: : :: *: *:: * : *:: * : : * .:	
SEQ ID NO:605	5 GITVTLLSGVLYVDGHRLASGVQVHNLPEYMTVAVPSTTIIYSRVGRSVNSQNSTGWV	195
SEQ ID NO:606		
SEQ ID NO:605		
SEQ ID NO:606		
SEQ ID NO:607		
SEQ ID NO:604		
SEQ ID NO:607		
N-E 1101007	: : * * * * : * : *	4 U 4
SEQ ID NO:605	5 FYVRVKHGDFSAVSSPMSNMTENERLLHFF 225	
SEQ ID NO:606		
SEQ ID NO:605		
SEQ ID NO:606	~	
SEQ ID NO:607	~	
SEQ ID NO:604		
SEQ ID NO:6074		
PEO ID MO:0014	4 TFVYAKQSVDTGELESVATGGSSLYT 230	
	: : .	
	FIGURE 7D	
	FIGURE 7D	
SEQ ID NO:6056	FIGURE 7D	18
SEQ ID NO:6056 SEQ ID NO:6064	FIGURE 7D  5PQRGRQG	18 17
SEQ ID NO:6056 SEQ ID NO:6064 SEQ ID NO:6060	FIGURE 7D  5PQRGRQG	18 17 31
SEQ ID NO:6068	FIGURE 7D  5MATVKWADASEPQRGRQG	31
SEQ ID NO:6060	FIGURE 7D  5MATVKWADASEPQRGRQG	31 55
SEQ ID NO:6068	FIGURE 7D MATVKWADASEPQRGRQG	31 55 58
SEQ ID NO:6060 SEQ ID NO:6060 SEQ ID NO:6071	FIGURE 7D MATVKWADASEPQRGRQG	31 55 58 <b>18</b>
SEQ ID NO:6060 SEQ ID NO:6071 SEQ ID NO:6051	FIGURE 7D MATVKWADASEPQRGRQG	31 55 58 <b>18</b>
SEQ ID NO:6066 SEQ ID NO:6071 SEQ ID NO:6071 SEQ ID NO:6075	FIGURE 7D MATVKWADASEPQRGRQG	31 55 58 <b>18</b> 35
SEQ ID NO:6066 SEQ ID NO:6071 SEQ ID NO:6075 SEQ ID NO:6075	FIGURE 7D  FIGURE 7D	31 55 58 <b>18</b> 35
SEQ ID NO:6066 SEQ ID NO:6061 SEQ ID NO:6075 SEQ ID NO:6075 SEQ ID NO:6056 SEQ ID NO:6056	FIGURE 7D  FIGURE 7D	31 55 58 <b>18</b> 35
SEQ ID NO:6066 SEQ ID NO:6071 SEQ ID NO:6075 SEQ ID NO:6075 SEQ ID NO:6066 SEQ ID NO:6066 SEQ ID NO:6066	FIGURE 7D MATVKWADASEPQRGRQG	31 55 58 <b>18</b> 35 70 70
SEQ ID NO:6066 SEQ ID NO:6075 SEQ ID NO:6075 SEQ ID NO:6075 SEQ ID NO:6066 SEQ ID NO:6066 SEQ ID NO:6066 SEQ ID NO:6066	FIGURE 7D	31 55 8 <b>18</b> 35 70 70 35 L15
SEQ ID NO:6066 SEQ ID NO:6071 SEQ ID NO:6075 SEQ ID NO:6075 SEQ ID NO:6066 SEQ ID NO:6066 SEQ ID NO:6066 SEQ ID NO:6066 SEQ ID NO:6066 SEQ ID NO:6071	FIGURE 7D MATVKWADASEPQRGRQG	31 55 58 <b>18</b> 35 70 70 35 L15 L18
SEQ ID NO:6066 SEQ ID NO:6071 SEQ ID NO:6075 SEQ ID NO:6075 SEQ ID NO:6075 SEQ ID NO:6066 SEQ ID NO:6066 SEQ ID NO:60671 SEQ ID NO:6051	FIGURE 7D	31 55 58 <b>18</b> 35 70 70 35 L15 L18
SEQ ID NO:6066 SEQ ID NO:6071 SEQ ID NO:6075 SEQ ID NO:6075 SEQ ID NO:6066 SEQ ID NO:6066 SEQ ID NO:6066 SEQ ID NO:6066 SEQ ID NO:6066 SEQ ID NO:6071	FIGURE 7D  MSFTPGKQSSS-RASSGNRSGNGILKWADQSDQSRNVQTRGRR-AQPKQTATSQQPS 50  MSFTPGKQSSS-RASSGNRSGNGILKWADQSDQSRNVQTRGRR-AQPKQTATTQ-PN 50  MSFVPGQENAGGRSSSVNRAGNGILKKTTWADQTERGPNNQNRGRR-NQPKQTATTQ-PN 50  FIGURE 7D  MSFTPGKQSSS-RASSGNRSGNGILKWADQSDQSRNVQTRGRR-AQPKQTATTQ-PN 50  MSFVPGQENAGGRSSSVNRAGNGILKKTTWADQTERGPNNQNGGRNGARPKQRRPQGLPN 40  FIGURE 7D  MSFTPGKQSSS	31 55 58 <b>18</b> 35 70 70 35 L15 L18
SEQ ID NO:6066 SEQ ID NO:6071 SEQ ID NO:6075 SEQ ID NO:6075 SEQ ID NO:6075 SEQ ID NO:6066 SEQ ID NO:6066 SEQ ID NO:60671 SEQ ID NO:6051	FIGURE 7D	31 55 58 <b>18</b> 35 70 70 35 L15 L18
SEQ ID NO:6066 SEQ ID NO:6075 SEQ ID NO:6075 SEQ ID NO:6075 SEQ ID NO:6066 SEQ ID NO:6066 SEQ ID NO:6066 SEQ ID NO:60675 SEQ ID NO:6075 SEQ ID NO:6075	FIGURE 7D  FIGURE 7D	31 55 58 <b>48</b> 35 70 70 35 L15 L18
SEQ ID NO:6066 SEQ ID NO:6075 SEQ ID NO:6075 SEQ ID NO:6075 SEQ ID NO:6066 SEQ ID NO:6066 SEQ ID NO:6066 SEQ ID NO:60675 SEQ ID NO:6075 SEQ ID NO:6075 SEQ ID NO:6075	FIGURE 7D	31 55 58 <b>48</b> 35 70 70 35 L15 L18 L <b>01</b>
SEQ ID NO:6066 SEQ ID NO:6075 SEQ ID NO:6075 SEQ ID NO:6075 SEQ ID NO:6066 SEQ ID NO:6066 SEQ ID NO:6066 SEQ ID NO:60675 SEQ ID NO:6075 SEQ ID NO:6075	FIGURE 7D	31 55 58 <b>48</b> 35 70 70 85 L15 L18 L <b>01</b>

SEQ ID NO:6068 QRQLLPRWYFYYLGTGPHAKDQYGTDIDGVYWVASNQADVNTPADILDRDPSSD--EAIP 173

SEQ ID NO:6071 SEQ ID NO:6051 SEQ ID NO:6075	QKQLLPRWYFYYLGTGPHAGASYGDSIEGVFWVANSQADTNTRSDIVERDPSSHEAIP  MKELSPRWYFYYLGTGPEASLPYGANKEGIVWVATEGALNTPKDHIGTRNPNNNAATV  RKPVPDAWYFYYTGTGPAADLNWGDTQDGIVWVAAKGADTKSRSNQGTRDPDKFDQYP  .*** **** : :*: *** . *	159
SEQ ID NO:6056 SEQ ID NO:6064 SEQ ID NO:6060 SEQ ID NO:6068 SEQ ID NO:6071 SEQ ID NO:6051 SEQ ID NO:6075	QKLPNGVTVVEEPDSRAPSRSQSRSQSRGRGESK QQLPSVVEIVEPNTPPASRANSRSRSRGNGNNRSRSPSNNRGNNQSRGNSQNRGNNQGRG GKVPGEFQLEVNQSRDNSRSRSQSRSRSRNR TRFPPGTVLPQGYYIEGS-GRSAPNSRSTSRASSRASS TRFAPGTVLPQGFYVEGS-GRSAPASRSGSRSQSRGP LQLPQGTTLPKGFYAEGSRGSQASSRSSSRSRGNSR LRFSDGGPDGNFRWDFIPLNRGRSGRSTAASSAAASR	190 176 210 212 <b>196</b>
SEQ ID NO.0075	: : : : : : : :	±03
SEQ ID NO:6056 SEQ ID NO:6064 SEQ ID NO:6060 SEQ ID NO:6068 SEQ ID NO:6071 SEQ ID NO:6051 SEQ ID NO:6075	PQSRNPSSDRNHNSQDDIMKAVAAALKSLGFDKPQEKDKKS ASQNRGGNNNNNNKSRNQSNNRNQSNDRGGVTSRDDLVAAVKDALKSLGIGENPDRHKQSQSRGRQQFNNKKDDSVEQAVLAALKKLGVDTEKQQQRSAGSRSRANSGNRTPTSGVTPDMADQIASLVLAKLGKDAAKPNNRARSSSNQRQPASTVKPDMAEEIAALVLAKLGKDAGQPNSTPGSSRGNSPARMASGGGTALALLLLDRLNQLESKVAPSREGSRGRRSDSGDDLIARAAKIIQDQ	<ul><li>249</li><li>215</li><li>251</li><li>252</li><li>235</li></ul>
SEQ ID NO:6056 SEQ ID NO:6064 SEQ ID NO:6060 SEQ ID NO:6068 SEQ ID NO:6071 SEQ ID NO:6051 SEQ ID NO:6075	RSKSKERSNSKTRDTTPKNENKHTWKRTAGKGDVTRFYQQVTKQTAKEIRQKILNKPRQKRSPNKQCTVQQCFKQVTKQSAKEVRQKILN	265 300 253 286 287 <b>275</b> 247
SEQ ID NO:6056 SEQ ID NO:6064 SEQ ID NO:6060 SEQ ID NO:6068 SEQ ID NO:6071 SEQ ID NO:6051 SEQ ID NO:6075	GPRDLDHNFGSAGVVANGVKAKGYPQFAELVPSTAAMLFDSHIVSKESG GPRGGFKNFGDAEFVEKGVDASGYAQIASLAPNVAALLFGGNVAVRELA GARSSSANFGDTDLVANGSSAKHYPQLAECVPSVSSILFGSYWTSKEDG GKRGPNQNFGGGEMLKLGTSDPQFPILAELAPTAGAFFFGSRLELAKVQNLSGNLDE GKRGPNQNFGGSEMLKLGTSDPQFPILAELAPTVGAFFFGSKLELVKKNSGGADE GRRGPEQTQGNFGDQDLIRQGTDYKHWPQIAQFAPSASAFFGMSRIGMEVTP GPRTKGK-EGNFGDDKMNEEGIKDGRVTAMLNLVPSSHACLFGSRVTPKLQL * * *** *	349 302 343 342 <b>327</b>
SEQ ID NO:6056 SEQ ID NO:6064 SEQ ID NO:6060 SEQ ID NO:60671 SEQ ID NO:6075 SEQ ID NO:6075 SEQ ID NO:6075	NTVVLTFTTRVTVPKDHPHLGKFLEELNAFTREMQDSYEITYNYKMTVPKSDPNVELLVSQVDAFKTGNAK-LQRKKEKKNKRETTLQDQIEVTFTHKYHLPKDDPKTGQFLQQINAYARPSEVAKEQR PQKDVYELRYNGAIRFDSTLSGFETIMKVLNENLNAYQQQDGTMNMSPKPQRQR PTKDVYELQYSGAVRFDSTLPGFETIMKVLNENLNAYQKDGGADVVSPKPQRKGRRSGTWLTYHGAIKLDDKDPQFKDNVILLNKHIDAYKTFPPTE	401 343 397 398 <b>368</b> 355
SEQ ID NO:6068 SEQ ID NO:6071	GQKNGQGENDNISVAAPKSRVQQNKIRELTAEDISLLKKMDEPFTEDTSEI 4 QAQEKKDEVDNVSVAKPKSSVQRNVSRELTPEDRSLLAQILDDGVVPDGLEDDSNV 4	148

SEQ ID NO:6051 -PKKDKKKKTDEAQPLPQRQKKQPTVTLLPAA----- 399 SEQ ID NO:6075 NSPAPRQQRPKKEKKLKKQDDEADKALTSDEERNNAQLEFYDEPKVINWGDAALGENEL 414





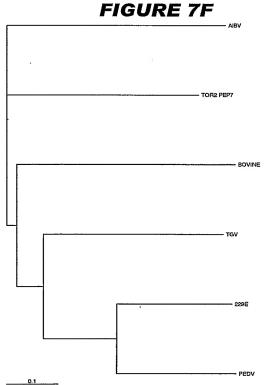


FIGURE 7G

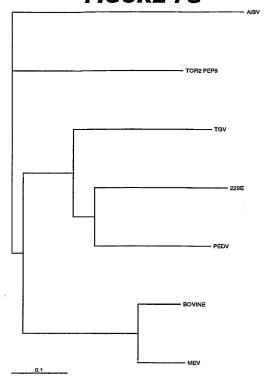
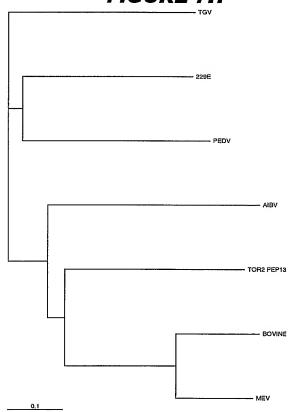


FIGURE 7H



AND THE RESIDENCE OF THE PARTY			**************************************				Section 1
	(1)		.10		20	,30	42
avian IBV partial 5'UTR 161-		TATTAAA	ATCTTA	ATTGTTGC	CTGGTAT	CACTGCTT	GTTTTGCC
HCoV-OC43 5'UTR bovine CV 5'UTR							
Consensus	٠,,						
	(')	inning analysis in garage and analysis of the state of th		Pyrone Allen Colonia de Carles (Santago de Carles de Car	. retire titlineesteleesessessiiniides		- Section 2
	(43)	43	50	60			84
avian IBV partial 5'UTR 161-			ACTTTA	TACATCI	rgrrgc	TGGGCTAC	
HCoV-OC43 5'UTR							
bovine CV 5'UTR	(1)		- Lam Jain- mas Jain- Jing ma				
Consensus	(43)						
				AND THE PERSON NAMED AND THE PERSON NAMED ASSESSMENT			Section 3
	(85)	85 90	بر نبوته مسامونی، بد معطانی دو	100		10	126
avian IBV partial 5'UTR 161-	(85)	CAGCGTC	CTACGO	GCGTCGT	rggcrg	GTTCGAGTG	CGAGGAAC
HCoV-OC43 5'UTR bovine CV 5'UTR	, ,						
Consensus	` '						Words, and the species were seen years years, years,
Consensus	(00)					iki — 1967 M. Mariero sura Misanas sa angangkanas sa sa 1872 <u>ayy</u> an	Section 4
	(127)	127		.140	150	West of the second state o	168
avian IBV partial 5'UTR 161-			TCATC			TOTETICA	
HCoV-OC43 5'UTR			-GATT	TGAGCG	TTTGC	FECETSCA	#cccsc
bovine CV 5'UTR			GATT	CGAGOG7	ATTTGCC	TGCGTGCA	Ecccc
Consensus			GATT	GAGCG	ATTTGC	STGCGTGCA	TCCCGC
anda i mag malandaran - 😘 I a malanda ku. Mag alamahakusandakusandakan da ya uga sambiliya . Sambaka kaya samba							- Section 5
	(169)	169	18	0	190	200	210
avian IBV partial 5'UTR 161-	(169)	TTCAGAC	GTACE	GTTCTGT	rrgrgr(	AAATAC	GGGGTCAC
HCoV-OC43 5'UTR	(33)	TTCA	·	GATCIC	FTGTTAC	ATCTTTT	GTAATCTA
bovine CV 5'UTR	(33)	TICH					
Consensus	(169)	TTCA	C			SATCTTTTC	
Principals and the service and	(244)	244	220				Section 6
avian IBV partial 5'UTR 161-	(211)	CRECCC	220	Cochenson S	CCCCCCC	240	202
HCoV-OC43 5'UTR	(68)	ZACTOTA	TA A A A A	Careca	1000CT	TIGAGCCI	carmence
bovine CV 5'UTR	(68)	AACTTTA	TAAAA	CATCCAC	CTCCCTC	TAGTCTAT	GCTGTGG
Consensus	(211)	AACTTTA	TAAAA	CATCCAC	CTCCCT	STAGTCTAT	GCCTGTGG
and the second second second second second second second second second second second second second second second		COMPRESSOR INC. CONTRACTOR CONTRA		Problem Communication and the communication of the	VII data in a companyone		Section 7
	(253)	253	260	270		280	294
avian IBV partial 5'UTR 161-	(251)	GCTACGT	TCTCG	ATAAGGT	rcggci7	TACGACGT	TTGTAGGG
HCoV-OC43 5'UTR	(110)	GCGTAGA	TTTTT	CATAGTGO	TGTT#	TATT-CAT	TTCT-GCT
bovine CV 5'UTR							
Consensus	(253)	GCGTAGA	TTTTTC	CATAGTGO	STGTCT	TATT CAT	TTCT GCT
Address Approximate Control of the C			· Vision			anne anne anne anne anne anne anne anne	Section 8
	(295)	295 30	0	,310		320	336
avian IBV partial 5'UTR 161	- (293)	GGTAGT	CCAAA	CAACCCC	TGAGGT	GACAGGTTC	TGGTGGTG
HCoV-OC43 5'UTF	₹ (150)	GTTAACA	GCTTT	CAGCCAG	GGACGT	GTTGTATCC	TAGGC
bovine CV 5'UTF	R (150)	GTTAACA	VGCTTT	CAGCCAG	GGACGT	STIGIATCC	TAGGC
Consensus	s (295)	GTTAACA	AGCTTT	CAGCCAG	GGACGT	GTTGTATCC	
**************************************	/2071	227		250	400		Section 9
SEQ ID NO: 9910	(337)		JAIG CIA C	350	360 7 T 7 C 7 C	alcinca a a a	373
SEQ ID NO: 9910 SEQ ID NO: 9919	: (189)		-accac	CONTACA	CCTCAC	NGI GACAAC	AIG
SEQ ID NO: 9892							
Consensus				ACCCATA			
	, ,	-					

		SEQ ID NO:
F1: $AT \frac{CTT}{TGC} G \frac{C}{A} G \frac{GT}{CG} A \frac{GGC}{TTT} G \frac{G}{C} GTG$	(136-154 nt)	6021
F2: $GTG_C^TGTG_C^GAT_{CC}^{AG}C_G^ACTTCA$	(152-172 nt)	6022
F3: CTTCAC $\frac{G}{T}G\frac{T}{A}TCT\frac{G}{C}TTGT\frac{GT}{TA}GA$	(168-195nt)	6023
R1: $AG_{G}^{\underline{A}} \underbrace{ACCTGT}_{TACAA} CAC \underbrace{C}_{G}TC \underbrace{AGG}_{CCT}GG \underbrace{T}_{C}TG$	(307-329nt)	6024
R2: $AAA_{T}^{C}G_{\overline{AA}}^{\overline{CG}}TATA_{\overline{AA}}^{\overline{GC}}C_{\overline{AC}}^{\overline{GA}}C_{\overline{AC}}^{\overline{CT}}TATG$	(265-288nt)	6025
R3: $C_{\overline{AC}}^{\overline{GA}}C_{\overline{AC}}^{\overline{CT}}TATG_{\overline{AA}}^{\overline{CG}}A_{\overline{A}}^{\overline{G}}A_{\overline{T}}^{\overline{C}}C_{\overline{TAC}}^{\overline{GTA}}GCCCA$	(250-274nt)	6026

						Section 1
	(1)	1	.10		20	36
avian IBV 3'UTR (NC_001451) 27103- HCoV-OC43 3'UTR partial bovine CV 3'UTR Consensus	- (1) I (1) I (1)	GTAACA	TAATG	GACCTGT	TGTTTCCT	GGTACATTTT
	***************************************					Section 2
avian IBV 3'UTR (NC_001451) 27103- HCoV-OC43 3'UTR partial bovine CV 3'UTR Consensus	· (37) I (1) I (1)	GTTAAA	CACTA	TTTCTG1		ATCAATTATT
I yair ishin in Abbritahnah ath unkayadan mayo saqaanaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa	(70)					Section 3
avian IBV 3'UTR (NC_001451) 27103- HCoV-OC43 3'UTR partial bovine CV 3'UTR Consensus	(1) (1)					108 ATACTTAAGC
A STATE OF THE STA	arama ara	* * * * *******************************				Section 4
avian IBV 3'UTR (NC_001451) 27103- HCoV-OC43 3'UTR partial bovine CV 3'UTR Consensus	l (1) : (1)					
a professional designation of the second sec	And the second second					Section 5
avian IBV 3'UTR (NC_001451) 27103- HCoV-OC43 3'UTR partial bovine CV 3'UTR Consensus	- (145) I (1) I (1)	GTGCTT	TTTTT	TGTTGT	T A A	TAGTTINGC
avian IBV 3'UTR (NC_001451) 27103- HCoV-OC43 3'UTR partial bovine CV 3'UTR Consensus	l (14) l (11)	TTTATO CTTAT- CTTAT- CTTAT	GTCGG GTCGG	AATTCAA CACCTGO CACCTGO CACCTGO	200 MAGTAAGA TGGTAACC TGGTAACC TGGTAACC	216 GTMAAGGAAG CCTC-GCAGG CCTC-GCAGG CCTC GCAGG
avian IBV 3'UTR (NC_001451) 27103- HCoV-OC43 3'UTR partial bovine CV 3'UTR Consensus	l (48) l (45)	217 ATAGGC AAAGTC AAAGTC	ATGTA	230 GCTTGÄ1 A1	240 TACCTACA AAGGCAC- TAAGGCAC-	Section 7 252 TGTCTATCGC TCTCTATCAG TCTCTATCAG TCTCTATCAG

# FIGURE 10 (contd.)

									<b></b>	
12	2531	253	260	100° 5° 1° 10° 10° 10° 10° 10° 10° 10° 10° 10°	27	70	Superior Company		Secti	on 8 288
avian IBV 3'UTR (NC_001451) 27103- (2	251)	CAGGGA		ασταα			או איריו	m A Ca	A C C C	
HCoV-OC43 3'UTR partial	(76)	AATGGA-	- m G 1	CETC	CT C	C T Z	TAAT	ACAT	*******	G
bovine CV 3'UTR	(73)	AATGGA-	- m C1		CITIC.	$\sim$ $\sim$ $\sim$ $\sim$	1 12 V 1	IN C N T	17 C 7 -	G
Consensus (2				CTTG						G
		21212 0024		CILG	CTO.	CIM	TWWT	AGAI	. AGA Secti	
10	289)	280		300			240	<del>********************************</del>	UCG!	
avian IBV 3'UTR (NC_001451) 27103- (2			in claim		a airii		310	m v Min	AND THE RESERVE	324
HCOV OCAS SILTE mortio!	201) 107)	MAACGAP		AGAL		TAG	ATTI	TAAT	TTAG	LITT
HCoV-OC43 3'UTR partial (1 bovine CV 3'UTR (1	101)	AAGGITE	THE	AGAC	LAL	- A G	A111-			
Consensus (2	104)	AACCHUA	TAGE	MUAL	THE	_67E	AHW-	1.3-0.0	TTAG:	Landon .
001001003 (2	200)	AMGGIIA	LIAGO	AGAC	IAI	AG.	ATI		ATTAG: - Sectio	
//	2051	325 33	2		240	***************************************			- accito	
avian IBV 3'UTR (NC_001451) 27103- (3	325)	320 331			340		den e lite	350	CLI LOTEM E	360
UCAL OCA2 2017D modial (d	120	AATTITI	AGII	TAGT	TTA	AGT	TAGI	-11 11 P	GAGT.	AGG
HCoV-OC43 3'UTR partial (1	100)	AAAGTTI	TOTO	1.667	AAT	OTA	TAGI	GETC	GAGA	AAG
bovine CV 3'UTR (1	100)	APAGIAI	HOLL	TOOL	AAT	GTA	TAGI	Gure	GAGA	AAG
Consensus (3	323)	AAAGTTT	TGTG	TGGT	AAT	GTA	TAGI	GTTG		
	2041	204	0.7	^					<ul><li>Section</li></ul>	
(5) 004454) 07400 (6)	361)	361	37	U 	ereco	380	ngering i saar	posterior	- Agreem	<u>396</u>
avian IBV 3'UTR (NC_001451) 27103- (3	358)	TATAAAG	ATGC	CAGE	GCC	GGG	GCCA	C-GC	GGAG	PAC
HCoV-OC43 3'UTR partial (1	175)	IIG-AAAC	ACT-		GCG	GAA	GTAA	TTGE	CGAC	AAG
bovine CV 3'UTR (1	172)	MG-AAAC	ACT-							
Consensus (3	361)	TG AAAG	ACT	T	GCG	GAA	GTAA		CGAC	
			***************************************			~~~~			Sectio	n 12
	397)		F TESTING	410		rs eren 1	,420		y vironiana a	432
avian IBV 3'UTR (NC_001451) 27103- (3	393)	GATCGAG	GGTA	CAGC	AOT.	AGG	ACGC	CCAT	TAGG	3GA
HCoV-OC43 3'UTR partial (2	206)	TGCCCAA	AGGG	AAGA	GCC	AGC.	ACG-			
bovine CV 3'UTR (2	203)	TGGGCAA	GGGG	AAGA	GCC	AGC.	ATG-	£71%	TAAG	KAN
Consensus (3	397)	TGCCCAA	GGGG	BAAGA	GCC	AGC.	ACG	T	TAAG	
MARKET PROPERTY AND ARTER				o'terrotel'enne he enderleden egge				TP-50- Min-durant	Section	n 13
	133)		440	MONEY SPECIAL CONTRA	<u>. 45</u>		Says 6 gas, 19			468
avian IBV 3'UTR (NC_001451) 27103- (4	129)	AGAGCTA	AATI	TTAG	T:	r.TA	AGTT	AAGT	TTAA!	r-T
HCoV-OC43 3'UTR partial (2	238)	CCACCCA	GTAA	TTAG	TAA	ATG.	AATG	AAGT	TAAT!	ГАТ
bovine CV 3'UTR (2	235)	CCATCCA	GTAA	TTAG	TAA	ATG	AATG	AAGT	TAAT	PAT
Consensus (4	133)	CCA CCA	GTAA	TTAG	TAA	ATG	AATG			
		***************************************	***********					- Min t continue	<ul> <li>Sectio</li> </ul>	n 14
	169)			480	**************************************		490			504
avian IBV 3'UTR (NC_001451) 27103- (4	162)	GGCTAAG	TATA	GTTA	AAA:	TTT	ATAG	GCTA	GTATA	4GA
HCoV-OC43 3'UTR partial (2	274)	GGCCAAT	TGGA	AGAA	TCA	j				
bovine CV 3'UTR (2		GGCCAAT	TGGA	AGAA	TCAC	C ·				
0	•					~				
manufacture of the second control of the sec		A Mile Art - The Section of the Control of the Cont			*******				Section	า 15
(5	(305	505								-
avian IBV 3'UTR (NC_001451) 27103- (4	198)	GTTAGAG	CA	SEQ	ID I	NO:	9911			
HCoV-OC43 3'UTR partial (2				SEQ	ID 1	NO:	9920			
bovine CV 3'UTR (2	290)			SEQ	ID 1	NO:	9893			
Consensus (5										
	•									

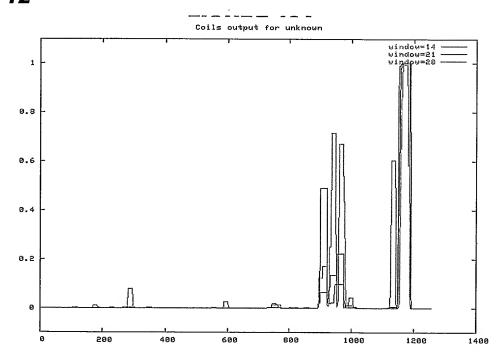
#### FIGURE 11

**SEQ ID NO:** 

F-1 TCTATC $\frac{GCC}{AGA}A = \frac{G}{T}GGATGTCT$	(245 ~ 265 nt)	6027
F-2 TTAGTT $\frac{T}{G}$ AA $\frac{TT}{AG}$ TTT $\frac{A}{T}$ GT $\frac{T}{G}$ T $\frac{A}{G}$ GT	(318 ~ 339 nt)	6028
F-3 TAGTGTT $\frac{A}{G}$ GAG $\frac{T}{A}$ A $\frac{G}{A}$ GT $\frac{A}{G}$ TAAAGA	( 346 ~ 368 nt)	6029
R-1 $A \frac{A}{C} TT \frac{G}{A} GCCATA \frac{A}{T} T \frac{T}{A} AACTT$	(458 ~ 476 nt)	6030

# R-2 ACTAA $\frac{TTAC}{AATT}$ T $\frac{G}{A}$ G $\frac{C}{T}$ T $\frac{GG}{CT}$ T $\frac{AA}{CC}$ C $\frac{T}{C}$ TAA (426 ~ 448 nt)

R-3 T 
$$\frac{TG}{AC}$$
 TC  $\frac{G}{C}$  GC  $\frac{AA}{G}$  T  $\frac{TA}{GG}$  C  $\frac{TT}{C}$  C  $\frac{C}{G}$  GCA (375 ~ 395 nt) **6033**



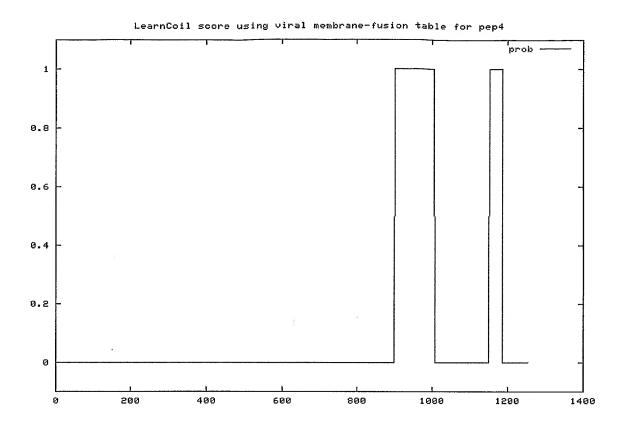
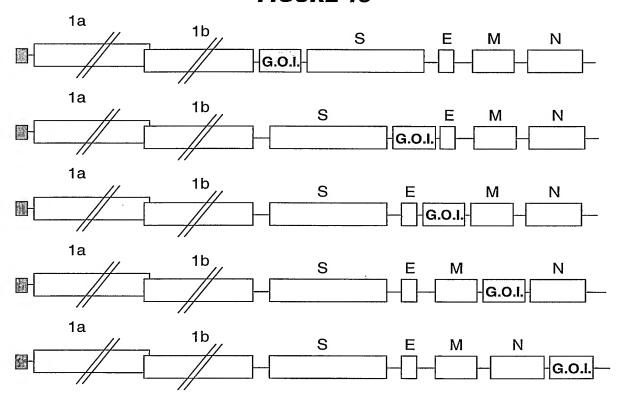
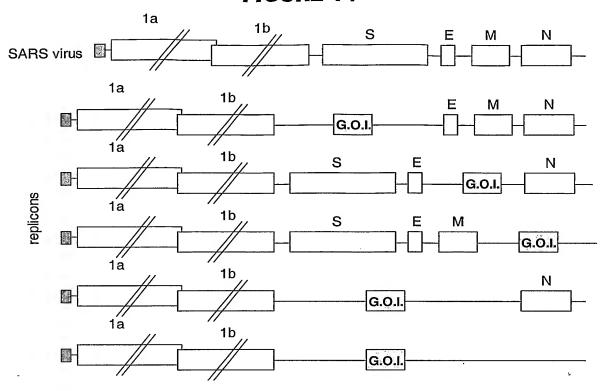
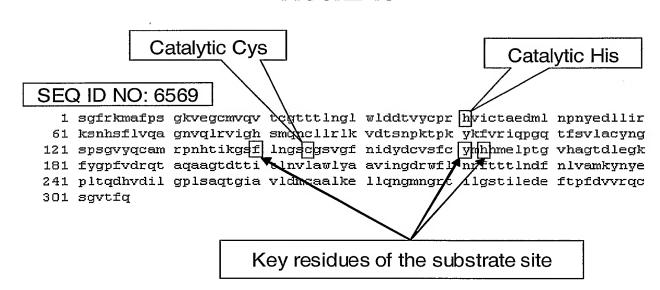


FIGURE 13

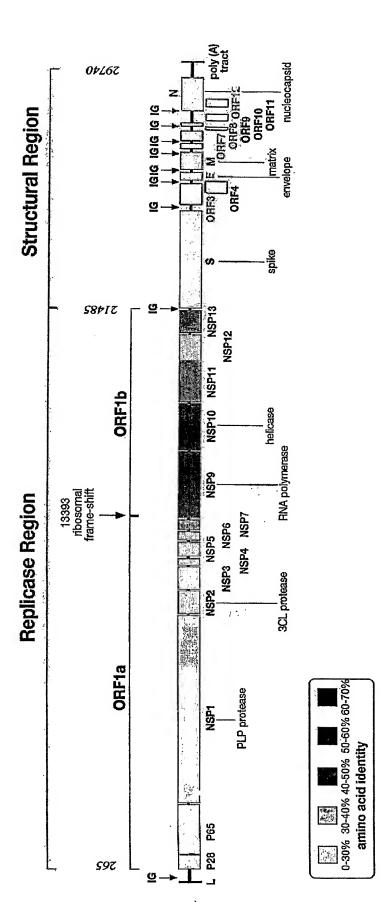


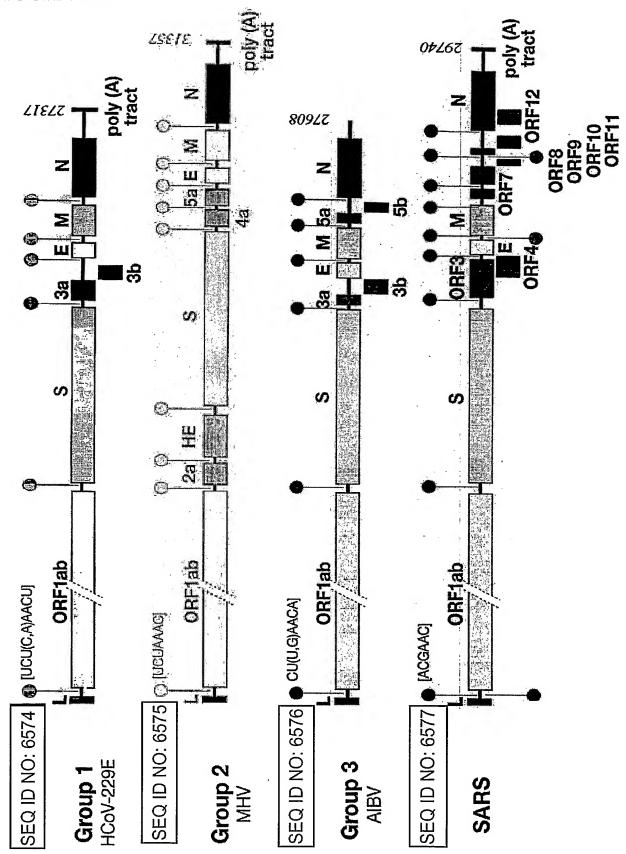
#### FIGURE 14

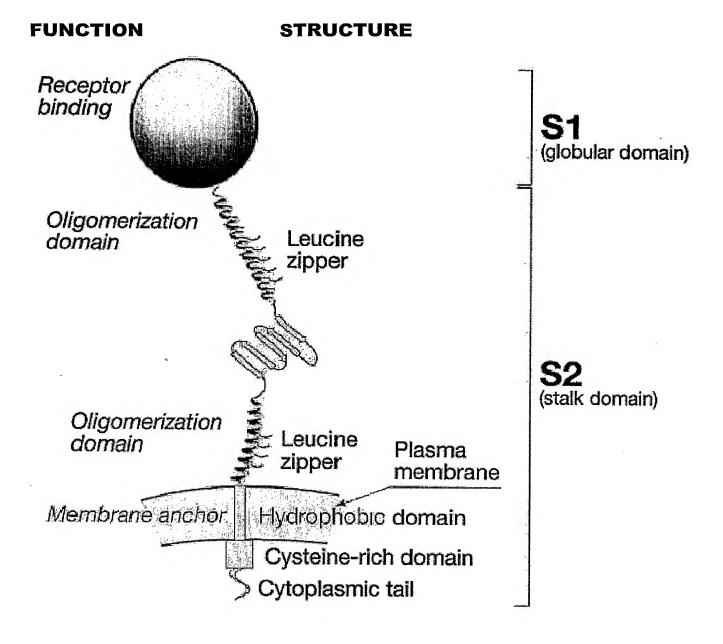


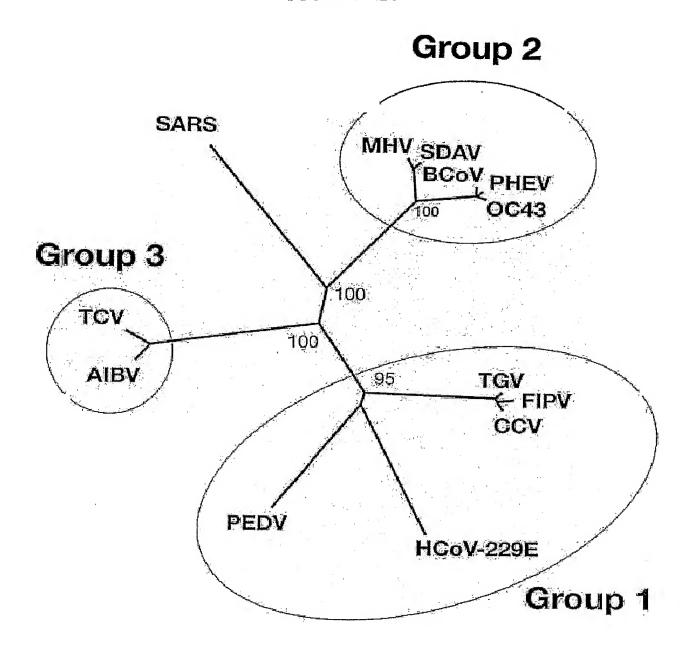


							·	Section 1
	(1)		,10	20		,30		51
avian IBV nsp2	(1)	EGPKALVSF	SAVEK	CIVSVS	YRGNNL	MGLWLG	DULYCPE	vLGKFBG
MHV nsp2	(1)	SCIVEMVSE	PSKVEP	CIVSUT	YGMMTL	MGLWLD	DKVYCPR	VICSSADMTD
SARS rsp2	(1)	SCFRKMAFF	SGKVEG	CMVQVT	CGTTTL	NGLWLD	DNVYCERH	VICTAEDMLN
BCoV nsp2								VICSASDMIN
Consensus								VICSAADNTN
		in the day has a survive of the manifest that the substitute of the survive of the substitute of the survive of	Vandarous and Assessment State of the State			-		——— Section 2
	(52)	52 6		70		,80	90	102
avian IBV nsp2	(49)	DOWNDYLNI	ANNHE CI	EVITOR	GVELMV	VSRRLE	GAVLTLQT	AMAETPKT
MHV nsp2	(52)	PDYPNLLCF	VTSSDF	CVMSGR	-MSLT'/	MSYQMQ	GCQLVLTV	TLONGNIEKY
SARS nsp2								DTSNPKTPKY
BCoV nsp2								TLOMSRTPKY
Consensus								TLQNEKTEKY
	*							Section 3
	(103)	103 .110	0	.120		130	.140	153
			STIAC	Arggiv	VGLXPV	TMRSNG	PIRASHLA	GK CGSYGBNE
								08 08 V 6 <b>V U</b>
SARS nsn2	(102)	KEVRHOPGO	PERVIA	VNCEP	SGVMOC	AMRPNH	TKGS	GSCGSVGENI
BCoV nsn2	(102)	TEGVVKPGE	TOP TYTE	AVNGKP	OCARHU	THE SEA	TRESTA	as asvakvi.
Consensus	(103)	KEGVVKPGE	TETTILD	VNGSP	CCAPHY	TMRSSH	TIKOSELO	GSCGSVGFVI
00110011000	1	*** ** * * ***		the site of the state of the state of	WOLLT IN		the while the best feet for the best	Section 4
, ,	(154)	154 .160		.170	- 16	an .	.190	204
avian IRV nen2	(161)	Wecausa a	PASSET FOR	OMNITHON	CTARMO	Bewagy	VICE STAND	VPPONLVTNH
Cren VHM	(153)	menes Bearly			ernreu!	MAN AND A	BILL CHARGO.	PVQDYTQTVH
9489 non2	(153)	HVNA CEAL	in a second	DOMESTICA	ondia		nubloasos nublasiska	AGTOTTITE
BCoV nep2	14521	Monorbook	Lilar or a		ondenci	Revolv	ver outlor	PVODVIQEVM
Conconque	1150)	DODOHYEUV	PARIME EL C	emocum emocum	CODE C	Mr 1 VF A	nnachiller rrachiller	PVQDYTQTVN
Outractiaus :	(194)	DGDCANLAY	arra arra		Carryn (a)	Driger	KDWÄLLÄD	Section 5
	(205)	205 210	7	220	230		240	255
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BCaV acan	(204)	WHITE I SELECTIVE	TMODE		PUNKEL	TERROR	HINA WHEN I II	FSQVKSDL
				W. 400 Dear Text area (1977)	PECCOUN	COMPER	i:vwa <u>ls</u> mg NVWAMSMG	rachinan-r
Consensus	(ZUD)	VVAWLYAAI	IN UN	W	L POSDI	Canadr.	HVWAMSMG	
	co cos	ΛΕΛ	~~	···	200		000	Section 6
	(256)		27		280		,290	306
								ELTPESVENO
MHV nsp2	(247)	VLDALASMI	GAMAEdi	JLAAIK	RLHS-G	<b>FOCKOI</b>	LUSCYLED	ELTPSD/YQQ
								EFTFFDVVRQ
								ELTPSDVYQQ
Consensus	(256)	VIDALAAMI	GVSVE I	LLAAIK	RL S G	FQGRQI	LGSCILED	ELTPSDVYQQ
	Managara da de la composição de la compo		•			***************************************		Section 7
	(307)	307 313						
avian IBV nsp2	(301)	IGGVRLO	SEQ ID	NO: 657	70			
		LACVKLQ	SEQ ID	NO: 657	71			
SARS nsp2			. =	NO: 656				
BCoV nsp2				NO: 657				
Consensus				NO: 657				
			<u>.</u>					









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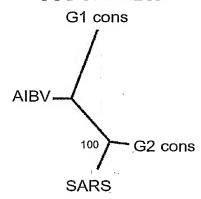


FIGURE 21B

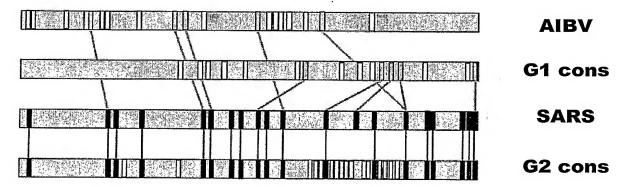
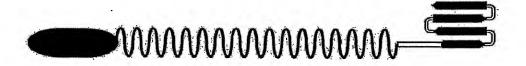
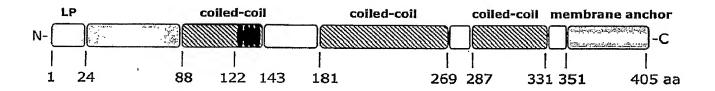


FIGURE 22





#### FIGURE 23

LPRKSOPTSISCRSVL-TNFKICVAVARLHA-CTYAV-TIINFTVVDKKRVTRPSSADCL RFRPCCSRSSAYLGFVRV-PKGKMESLVLGVNEKTHVQLSLPVLOVRDVLVRGFGDSVEE ALSEAREHLKNGTCGLVELEKGVLPQLEQPYVFIKRSDALSTNHGHKVVELVAEMDGIQY GRSGITLGVLVPHVGETPIAYRNVLLRKNGNKGAGGHSYGIDLKSYDLGDELGTDPIEDY EQNWNTKHGSGALRELTRELNGGAVTRYVDNNFCGPDGYPLDCIKDFLARAGKSMCTLSE QLDYIESKRGVYCCRDHEHEIAWFTERSDKSYEHQTPFEIKSAKKFDTFKGECPKFVFPL NSKVKVIQPRVEKKKTEGFMGRIRSVYPVASPQECNNMHLSTLMKCNHCDEVSWQTCDFL KATCEHCGTENLVIEGPTTCGYLPTNAVVKMPCPACQDPEIGPEHSVADYHNHSNIETRL RKGGRTRCFGGCVFAYVGCYNKRAYWVPRASADIGSGHTGITGDNVETLNEDLLEILSRE RVNINIVGDFHLNEEVAIILASFSASTSAFIDTIKSLDYKSFKTIVESCGNYKVTKGKPV KGAWNIGOORSVLTPLCGFPSQAAGVIRSIFARTLDAANHSIPDLORAAVTILDGISEOS LRLVDAMVYTSDLLTNSVIIMAYVTGGLVQQTSQWLSNLLGTTVEKLRPIFEWIEAKLSA GVEFLKDAWEILKFLITGVFDIVKGQIQVASDNIKDCVKCFIDVVNKALEMCIDQVTIAG AKLRSLNLGEVFIAQSKGLYRQCIRGKEQLQLLMPLKAPKEVTFLEGDSHDTVLTSEEVV LKNGELEALETPVDSFTNGAIVGTPVCVNGLMLLEIKDKEQYCALSPGLLATNNVFRLKG GAPIKGVTFGEDTVWEVQGYKNVRITFELDERVDKVLNEKCSVYTVESGTEVTEFACVVA EAVVKTLQPVSDLLTNMGIDLDEWSVATFYLFDDAGEENFSSRMYCSFYPPDEEEEDDAE CEEEEIDETCEHEYGTEDDYQGLPLEFGASAETVRVEEEEEEDWLDDTTEOSEIEPEPEP TPEEPVNQFTGYLKLTDNVAIKCVDIVKEAQSANPMVIVNAANIHLKHGGGVAGALNKAT NGAMOKESDDYIKLNGPLTVGGSCLLSGHNLAKKCLHVVGPNLNAGEDIOLLKAAYENFN SQDILLAPLLSAGIFGAKPLQSLQVCVQTVRTQVYIAVNDKALYEQVVMDYLDNLKPRVE APKQEEPPNTEDSKTEEKSVVQKPVDVKPKIKACIDEVTTTLEETKFLTNKLLLFADING KLYHDSQNMLRGEDMSFLEKDAPYMVGDVITSGDITCVVIPSKKAGGTTEMLSRALKKVP VDEYITTYPGQGCAGYTLEEAKTALKKCKSAFYVLPSEAPNAKEEILGTVSWNLREMLAH AEETRKLMPICMDVRAIMATIQRKYKGIKIQEGIVDYGVRFFFYTSKEPVASIITKLNSL NEPLVTMPIGYVTHGFNLEEAARCMRSLKAPAVVSVSSPDAVTTYNGYLTSSSKTSEEHF VETVSLAGSYRDWSYSGQRTELGVEFLKRGDKIVYHTLESPVEFHLDGEVLSLDKLKSLL SLREVKTIKVFTTVDNTNLHTQLVDMSMTYGQQFGPTYLDGADVTKIKPHVNHEGKTFFV LPSDDTLRSEAFEYYHTLDESFLGRYMSALNHTKKWKFPOVGGLTSIKWADNNCYLSSVL LALQQLEVKFNAPALQEAYYRARAGDAANFCALILAYSNKTVGELGDVRETMTHLLOHAN LESAKRVLNVVCKHCGQKTTTLTGVEAVMYMGTLSYDNLKTGVSIPCVCGRDATOYLVOO ESSFVMMSAPPAEYKLQQGTFLCANEYTGNYQCGHYTHITAKETLYRIDGAHLTKMSEYK GPVTDVFYKETSYTTTIKPVSYKLDGVTYTEIEPKLDGYYKKDNAYYTEQPIDLVPTQPL PNASFDNFKLTCSNTKFADDLNQMTGFTKPASRELSVTFFPDLNGDVVAIDYRHYSASFK KGAKLLHKPIVWHINQATTKTTFKPNTWCLRCLWSTKPVDTSNSFEVLAVEDTOGMDNLA CESQQPTSEEVVENPTIQKEVIECDVKTTEVVGNVILKPSDEGVKVTOELGHEDLMAAYV ENTSITIKKPNELSLALGLKTIATHGIAAINSVPWSKILAYVKPFLGOAAITTSNCAKRL AQRVFNNYMPYVFTLLFQLCTFTKSTNSRIRASLPTTIAKNSVKSVAKLCLDAGINYVKS PKFSKLFTIAMWLLLLSICLGSLICVTAAFGVLLSNFGAPSYCNGVRELYLNSSNVTTMD FCEGSFPCSICLSGLDSLDSYPALETIQVTISSYKLDLTILGLAAEWVLAYMLFTKFFYL LGLSAIMQVFFGYFASHFISNSWLMWFIISIVQMAPVSAMVRMYIFFASFYYIWKSYVHI MDGCTSSTCMMCYKRNRATRVECTTIVNGMKRSFYVYANGGRGFCKTHNWNCLNCDTFCT GSTFISDEVARDLSLQFKRPINPTDQSSYIVDSVAVKNGALHLYFDKAGQKTYERHPLSH FVNLDNLRANNTKGSLPINVIVFDGKSKCDESASKSASVYYSQLMCQPILLLDQALVSDV GDSTEVSVKMFDAYVDTFSATFSVPMEKLKALVATAHSELAKGVALDGVLSTFVSAAROG VVDTDVDTKDVIECLKLSHHSDLEVTGDSCNNFMLTYNKVENMTPRDLGACIDCNARHIN AQVAKSHNVSLIWNVKDYMSLSEQLRKQIRSAAKKNNIPFRLTCATTRQVVNVITTKISL KGGKIVSTCFKLMLKATLLCVLAALVCYIVMPVHTLSIHDGYTNEIIGYKAIQDGVTRDI ISTDDCFANKHAGFDAWFSQRGGSYKNDKSCPVVAAIITREIGFIVPGLPGTVLRAINGD FLHFLPRVFSAVGNICYTPSKLIEYSDFATSACVLAAECTIFKDAMGKPVPYCYDTNLLE GSISYSELRPDTRYVLMDGSIIOFPNTYLEGSVRVVTTFDAEYCRHGTCERSEVGICLST SGRWVLNNEHYRALSGVFCGVDAMNLIANIFTPLVQPVGALDVSASVVAGGIIAILVTCA AYYFMKFRRVFGEYNHVVAANALLFLMSFTILCLVPAYSFLPGVYSVFYLYLTFYFTNDV SFLAHLQWFAMFSPIVPFWITAIYVFCISLKHCHWFFNNYLRKRVMFNGVTFSTFEEAAL

CTFLLNKEMYLKLRSETLLPLTQYNRYLALYNKYKYFSGALDTTSYREAACCHLAKALND FSNSGADVLYQPPQTSITSAVLQSGFRKMAFPSGKVEGCMVQVTCGTTTLNGLWLDDTVY CPRHVICTAEDMLNPNYEDLLIRKSNHSFLVQAGNVQLRVIGHSMQNCLLRLKVDTSNPK TPKYKFVRIQPGQTFSVLACYNGSPSGVYQCAMRPNHTIKGSFLNGSCGSVGFNIDYDCV SFCYMHHMELPTGVHAGTDLEGKFYGPFVDRQTAQAAGTDTTITLNVLAWLYAAVINGDR WFLNRFTTTLNDFNLVAMKYNYEPLTQDHVDILGPLSAQTGIAVLDMCAALKELLQNGMN GRTILGSTILEDEFTPFDVVRQCSGVTFQGKFKKIVKGTHHWMLLTFLTSLLILVOSTOW SLFFFVYENAFLPFTLGIMAIAACAMLLVKHKHAFLCLFLLPSLATVAYFNMVYMPASWV MRIMTWLELADTSLSGYRLKDCVMYASALVLLILMTARTVYDDAARRVWTLMNVITLVYK VYYGNALDQAISMWALVISVTSNYSGVVTTIMFLARAIVFVCVEYYPLLFITGNTLQCIM LVYCFLGYCCCCYFGLFCLLNRYFRLTLGVYDYLVSTQEFRYMNSQGLLPPKSSIDAFKL NIKLLGIGGKPCIKVATVQSKMSDVKCTSVVLLSVLOOLRVESSSKLWAOCVOLHNDILL AKDTTEAFEKMVSLLSVLLSMQGAVDINRLCEEMLDNRATLQAIASEFSSLPSYAAYATA QEAYEQAVANGDSEVVLKKLKKSLNVAKSEFDRDAAMQRKLEKMADQAMTOMYKQARSED KRAKVTSAMQTMLFTMLRKLDNDALNNIINNARDGCVPLNIIPLTTAAKLMVVVPDYGTY KNTCDGNTFTYASALWEIQQVVDADSKIVQLSEINMDNSPNLAWPLIVTALRANSAVKLO NNELSPVALRQMSCAAGTTQTACTDDNALAYYNNSKGGRFVLALLSDHQDLKWARFPKSD GTGTIYTELEPPCRFVTDTPKGPKVKYLYFIKGLNNLNRGMVLGSLAATVRLQAGNATEV PANSTVLSFCAFAVDPAKAYKDYLASGGQPITNCVKMLCTHTGTGOAITVTPEANMDOES FGGASCCLYCRCHIDHPNPKGFCDLKGKYVQIPTTCANDPVGFTLRNTVCTVCGMWKGYG CSCDOLREPLMOSADASTFLNGFAV-VQPVLHRAAQALVLMSSTGLLIFTTKKLLVLQSS -KLIAVASRRRMRKAIY-TLTL-LRGILCLTTNMKRLFITWLKIVORLLSMTFSSLE-MV TWYHIYHVSV-LNTQWLI-SMLYVILMRVIVIH-KKYSSHTIAVMMIISIRRIGMTS-RI LTSYAYMLT-VSVYANHY-RLYNSAMLCVMQAL-AY-H-IIRILMGTGTISVISYK-HOA AEFLLWIHITHC-CPSSL-LGHWLLSPIWMLISQNHLLSGIC-NMILRKRDFVSSTVILN IGTRHTIPIVLTVWMIGVSFIVQTLMCYFLLCFHLQVLDH--EKYL-MVFLLLFOLDTIF VS-ESYIIRM-TYIARVSVSRNF-CMLLIQLCMQLLAIYC-INALHAFO-LH-OTMLLFK LSNPVILIKTFMTLLCLKVSLRKEVLLN-NTSSLLRMATLLSVIMTIIVIICOOCVISDN SYS-LKLLINTLIVTMVAVLMPTK-SLTIWINQLVSHLINGVRLDFIMTQ-VMRIKMHFS RILSVMSSLL-LK-ILSMPLVQRIELAP-LVSLSVVL-QIDSFIRNY-SQ-PPLEELLW-LEQASFTVAGIIC-KLFTVM-KLHTLWVGIIQNVTEPCLTCLG-WPLLFLLANITLAVTY HTVSTG-LTSVRKY-VRWSCVAAHYMLNQVEHHPVMLQLLMLIVSLTFVKLLQPM-MHFF QLMVIR-LTSMSAIYNTGSMSVSIEIGMLIMNSWMSFTLTCVNISP--FFLMMPLCAITV TMRLKV--LALRTLRQFFIIKIMCSCLRQNVGLRLTLLKDLTNFAHSIOC-LNKEMITCT CLTQIHQEY-AQAVLSMILSKQMVHL-LKGSCHWLLMLTHLQNILIRSMLMSFTCIYNTL ESYMMSLLATCWTCIP-C-LMITPHGTGNLSFMRLCTHHIQSCRL-VLVYCAIHRLHFVA VPVLGDHSYVASAAMTMSFQHHTN-CCLLIPMFAMPQVVMSLM-HNCI-EV-AIIASHIS LPLVFHYVLMVRFLVYTKTHV-AVTMSLTSMR-QHVIGLMLAITYLPTLVLRDSSFSQOK RSKPLRKHLSCHMVLPLYAKYSLTENCIFHGRLENLDHH-TETMSLLVTV-LKIVKYRLE STPLKKVTMVMLLCTEVLRHTS-MLVITLC-HLTL-CHLVHLL-CHKSTM-ELLACTOHS TSQMSFLAMLQIIKRSACKSTLHSKDHLVLVRVILPSDLLSITHLLA-CIRHALMQLLMP YVKRH-NICP-INVVESYLRVRA-SVLINSK-IQH-NSMFSAL-MHCOKOLLTL-SLMKS LWLLIMT-VLSMLDFVQNTTSILAILLNYQPPAHC-LKAH-NQNILIQCADL-KQ-VQTC SLELVAVVLLKLLTL-VL-FMTIS-KHTRISQLNASKCSTKVLLHMMFHLQSTDLK-AL-ENFLHAILLGEKLFLSHLIIHRTL-LQKS-DCLRRLLIHHRVLNMTMSYSHKLLKQHTLV MSTASMWLSQGQKLAFCA-CLIEIFMTNCNLQV-KYHVAMWLHYKOKM-LDFLRTVVRSL LVFILHRHLHTSALI-SSRLKDYVLTYQAYQRT-PTVDSSL-WVSK-ITKSMVTLICLSP AKKLFVTFVRGLALM-RAVMQLEMLWVLTYLSS-DFLQVLT--LYRLVMLTLKITQNSPE LMQNLHQVTSLNILYHSCIKACPGM-CVLR-YKCSVIH-KDCQTESCSSFGRMALSLHO-STLSRLDLKERVVCVTNVQLAFLLHQILMPAGIILWVLTMSITHL-LMFSSGALRVTFRV TMTNIARYMEMHMWLVVMLS-LDV-QSMSALLSALIGLLNTLL-EMN-GLILLAEKYNTW L-SLHCLLISFQFFMTLEIQRLSSVCLRLK-NGSSTMLSHVVTKLTK-RNSSILMLHITI NSLMVFVCFGIVTLIVTQPMQLCVGLTQESCQT-TYQAVMVVVCM-ISMHSTLOLSIKVH LLI-SNCLSFTILIVLVSLMANK-CRILIMFHSNLLRVLHDAI-VVLFADTMQMSTDSTW MHII--FLLDLAYGFTNNLILITCGIHLPGYRV-KMWLIMLLIKDTLMDTPAKHLFPSLI MLFTQR-MVLMWRSLKIROHFLLMLHLSFGLSVTLNOCORLRYSIIWVLISLLIL-SGTT

KEKPOHMYLQ-VSAQ-LTLPRNLLRVLVLHLLSCLMVEWKDR-TFLETPVMVF--QKVQS KV-HLQRDQHKLASMESH-LENQ-KHSLTTLRK-TALFNSCLKPTLLRAET-RILSPDHK WKLTFSSSLWMNSYSDISSRAMPSNTSFMEISVMDNLAVFI---A-PSAHKIHHLN-RIL SLWTAQ-KITS-QMRKQVHQNVCVL-LIFYLMTLSR--SHKICQ-FQKWSRLQLTMLKFH SCFGVRMDMLKPSTQNYKQVERGNQVLRCLTCTRCKECFLKSVTFRIMVKMLLYOKE---MSQSILNCVNT-IHLL-LYPTT-ELFTLVLALIKELHQVQLCSDNGCQLAHYLSIQILMT SSPTHILL-LETVQQYIRLINGTLLLAICMTLGPNM-QKRMTLKKGFSLICVDL-SKN-P WVVL-L-R-QSILGMLTFTSLWAISHGGQLLLQM-MHHHRKHF-LGLTILASRRNKLMAI PCMLTTFSGGTQILSSCLPIHSLT-ANFLLN-EELL-CLLRRIKSMI-FILFWKKVGLSL EKTTELWFQVIFLLTTKRTCLFSYYFLLSLVVVTLTGAPLLMMFKLLITLNILHL-GGFT ILMKFLDOTLFI-LRIYFFHFILMLQGFILLIIRLATLSYLLRMVFILLPQRNQMLSVVG FLVLP-TTSHSR-LLLTILLMLLYEHVTLNCVTTLSLLFLNPWVHRHIL-YSIMHLIALS STYLMPFRLMFQKSQVILNTYESLCLKIKMGFSMFIRAINL-M-FVIYLLVLTL-NLFLS CLLVLTLQILEPFLQPFHLLKTFGARQLQPILLAI-SQLHLCSSMMKMVQSQMLLIVLKI HLLNSNALLRALRLTKEFTRPLISGLFPQEML-DSLILQTCVLLERFLMLLNSLLSMHGR EKKFLIVLLITLCSTTQHFFQPLSAMAFLPLS-MIFASPMSMQILL-SREMM-DK-RODK LVLLLIIIINCQMISWVVSLLGILGTLMLLQLVIIIINIGILDMASLGPLRETYLMCLSP LMANLAPHLLLIVIGH-MIMVFTPLLALATNLTEL-YFLLNF-MHRPRFVDONYPLTLLR TSVSILILMDSLVLVC-LLLQRDFNHFNNLAVMFLISLIPFEILKHLKY-TFHLALLGV-V-LHLEQMLHLKLLFYIKMLTALMFLQQFMQINSHQLGAYILLETMYSRLKOAVL-ELSM STLLMSATFLLELAFVLVTIQFLYYVVLAKNLLWLILCL-VLIVQLLTLITPLLYLLTFO LALLQK-CLFLWLKPP-IVICTSAEILLNVLICFSNMVAFAHN-IVHSOVLLLNRIATHV KCSLKSNKCTKPQL-NILVVLIFHKYYLTL-SQLRGLLLRTCSLIR-HSLMLAS-SNMAN A-VILMLEISFVRRSSMDLQCCHLCSLMI-LLPTLLL-LVVLPLLDGHLVLALLFKYLLL CKWHIGSMALELPKMFSMRTKNKSPTNLTRRLVKFKNHLQQHQLHWASCKTLLTRMLKH-THLLNNLALILVQFQVC-MISFRDLIKSRRRYKLTG-LQADFKAFKPM-HNN-SGLLKSG LLLILLLKCLSVFLDNQKELTFVERATTLCPSHKOPRMVLSSYMSRMCHPRRGTSPORO QFVMKAKHTSLVKVFLCLMALLGLLHRGTSFLHK-LLQTIHLSQEIVMSLLASLTTQFMI LCNLSLTHSKKSWTSTSKIIHHQMLILATFQALTLLSSTFKKKLTASMRSLKI-MNHSLT FKNWENMSNILNGLGMFGSASLLD-LPSSWLQSCFVA-LVVAVASRVHALVVLAASLMRM TLSQFSRVSNYITHKRTYGFVYEIFYSWINYCTASKN-QCFSCKYCSCYSNDTATSLTPF RMACYWRCISCCFSERYQNNCAQ-KMAASPL-GLPVHLOFTAAICYHLFTSFACRCRYGG AIFVPLCLDIFSTMHQRM-NYYEMLALLEVQIQEPITL-CQLLCLLAHT-L-LLYTI-QC HRYNCRY-R-RHFNTKTQRRLPNWWLF-G-ALRC-RLCRCTWLFHRSLLPA-VYTNYYRH WY-KCYILHL-QAC-RPTECANTHNRRLFRSC-SSNGSNL--ADDDY-RAFVSTRK-VRT YVLIRFGRNRYVNS--RTSFSCFRGILASHTSHPYCASIVCVLLQYC-REFSKTNGLRLL AC-KSELF-RSS-SSGLNELTIIIILFGTLTLLIMADNGTITVEELKOLLEOWNLVIGFL FLAWIMLLQFAYSNRNRFLYIIKLVFLWLLWPVTLACFVLAAVYRINWVTGGIAIAMACI VGLMWLSYFVASFRLFARTRSMWSFNPETNILLNVPLRGTIVTRPLMESELVIGAVIIRG HLRMAGHSLGRCDIKDLPKEITVATSRTLSYYKLGASQRVGTDSGFAAYNRYRIGNYKLN TDHAGSNDNIALLVQ-VTTDVSSC-LPGYNSRDIDYHYEDFQDCYLES-RYNKFNSETII -ASN-EELFGVR--RTYGVRLSIKRT-KLFSS-H-LYLHLASYITIRSVLEVRLYY-KNL AHQEHTRAIHHFTLLLTINLH-LALAHTLLLLVLTVLDIPISCVODOFHONFSSDKRRFN KSSTRHFFSLLLL-YF-YFASPLRERQNE-AHFN-LLFVLFSLSAIPCFNNAYYILVFTR NPGSRRTLYQSLNEHETSHCFDLYFSMQLHMHCSTALCI--TSCA-RSL-GTTLGVILIA LLGFVL-ERFYLFIDGTLWFKHAHLMLLSTVKIQLVVRL-LGVGTFMKVTKLLHLETYLL F-INEQIKMSDNGPQSNQRSAPRITFGGPTDSTDNNQNGGRNGARPKQRRPQGLPNNTAS WFTALTQHGKEELRFPRGQGVPINTNSGPDDQIGYYRRATRRVRGGDGKMKELSPRWYFY YLGTGPEASLPYGANKEGIVWVATEGALNTPKDHIGTRNPNNNAATVLOLPOGTTLPKGF YAEGSRGGSQASSRSSSRSRGNSRNSTPGSSRGNSPARMASGGGETALALLLLDRLNOLE SKVSGKGQQQGQTVTKKSAAEASKKPROKRTATKOYNVTOAFGRRGPEOTOGNFGDODL IRQGTDYKHWPQIAQFAPSASAFFGMSRIGMEVTPSGTWLTYHGAIKLDDKDPQFKDNVI LLNKHIDAYKTFPPTEPKKDKKKKTDEAQPLPQRQKKQPTVTLLPAADMDDFSROLONSM SGASADSTQA-TLMMTTQGRWAM-TFSQFRLRYIVYSCAE-ILVTKOHK-V-LTLISHSN L-SMCNIREDLKEPPHFHRGHAEYDRGYSE-C-GELPIWKSPNV-N-F-CYPHVILIAS

#### FIGURE 24

TQEKPTNLDLL-ICSLNEL-NLCSCRSAACLVHLRSINNNKFYCR-QETSNSSLFCRLLT VSSVLOSIISIPRFRPGVTER-DGEPCSWCQRENTRPTQFACPSG-RRASAWLRGLCGRG PIGGT-TPQKWHLWSSRAGKRRTAPA-TALCVH-TF-CLKHQSRPQGR-AGCRNGRHSVR S-RYNTGSTRATCGRNPNCIPQCSSS-ER--GSRWS-LWHRSKVL-LR-RAWH-SH-RL-TKLEH-AWQWCTP-THS-AQWRCSHSLCRQQFLWPRWVPS-LHQRFSRTRGQVNVHSFRT T-LHRVEERCLLLP-P-A-NCLVH-AL--ELRAPDTLRN-ECQEI-HFQRGMPKVCVSS-LKSQSHSTTC-KEKD-GFHGAYTLCVPCCISTGV-QYALVYLDEM-SLR-SFMADVRLSE SHL-TLWH-KFSY-RTYYMWVPTY-CCSENAMSCLSRPRDWT-A-CCRLSQPLKH-NSTP QGR-D-MFWRLCVCLCWLL--ACLLGSSC-C-YWLRPYWHYW-OCGDLE-GSP-DTES-T C-H-HCWRFSFE-RGCHHFGIFLCFYKCLY-HYKES-LQVFQNHC-VLR-L-SYQGKARK RCLEHWTTEISFNTTVWFSLTGCWCYQINFCAHT-CSKPLNS-FAKSSCHHT-WYF-TVI TSCRRHGLYFRPAHQQCHYYGICNWWSCTTDFSVVV-SFGHYC-KTQAYL-MD-GET-CR S-ISQGCLGDSQISHYRCF-HRQGSNTGCFR-HQGLCKMLH-CC-QGTRNVH-SSHYRWR KVAITQLR-SLHRSKQGTLPSVYTWQGAAATTHAS-GTKRSNLS-R-FT-HSTYL-GGCS QER-TRSTRDAR--LHKWSYRRHTSLCKWPHALRD-GQRTILRIVSWFTGYKQCLSLKRG CTN-RCNLWRRYCLGSSRLQECENHI-A--TC-QSA--KVLCLHC-IRYRSY-VCMCCSR GCCEDFTTSF-SPYQHGY-S--VECSYILLI--CW-RKLFITYVLFLLPSR-GRRGRCRV -GRRN--NL-T-VRYRG-LSRSPSGIWCLS-NSSS-GRRRGRLAG-YY-AIRD-ARTRTY T-RTS-SVYWLFKTY-QCCH-MC-HR-GGTKC-SYGDCKCC-HTPETWWWCSRCTQQGNQ WCHAKGE--LH-AKWPSYSRRVLFAFWT-SC-EVSACCWT-PKCR-GHPAS-GSI-KFOF TGHLTCTIVVSRHIWC-TTSVFTSVRADGSYTGLYCSQ-QSSL-AGCHGLS--PEA-SGS T-TRGATKHRRFQN-GEICRTEACRCEAKN-GLH--GYHNTGRN-VSYQ-VTLVC-YQW-ALP-FSEHA-R-RYVFP-EGCTLHGR-CYH-W-YHLCCNTLQKGWWHY-DALKSFEESAS --VYNHVPWTRMCWLYT-GS-DCS-EMQICILCTTFRST-C-GRDSRNCILEFERNACSC -RDKKINAYMHGC-SHNGNHPT-V-RN-NSRGHR-LWCPILLLY--RACSFYYYEAELSK -AACHNANWLCDTWF-S-RGCALYAFS-SSCRSVSIITRCCYYI-WIPHFVIKDI-GALC RNSFFGWLLQRLVLFRTAYRVRC-IS-AW-QNCVPHSGEPRRVSS-R-GSFT-QTKESLI PAGG-DYKSVHNCGQH-SPHTACGYVYDIWTAVWSNILGWC-CYKN-TSCKS-G-DFLCT T---HTT--SFRVLPYS--EFSW-VHVCFKPHKEMEISSSWWFNFN-MG--OLLFV-CFI STSTA-SQIQCTSTSRGLL-SPCW-CC-LLCTHTRLQ--NCWRAW-CQRNYDPSSTAC-F GICKASS-CGV-TLWSENYYLNGCRSCDVYGYSIL--S-DRCFHSMCVWS-CYTISSTTR VFFCYDVCTTC-V-ITARYILMCE-VHW-LSVWSLHSYNC-GDPLSY-RSSPYKDVRVQR TSD-CFLQGNILHYNHQACVV-TRWSYLHRD-TKIGWVL-KG-CLLYRAAYRPCTNSTIT KCEF--FQTHMF-HKIC--FKSNDRLHKASFTRAICHILPRLEWRCSGY-L-TLFSEFOE RC-ITA-ANCLAH-PGYNQDNVQTKHLVFTLSLEYKASRYFKFI-SSGSRRHTRNGOSCL -KSTTHL-RSSGKSYHTEGSHRV-RENYRSCRQCHT-TIR-RC-SNTRVRS-GSYGCLCG KHKHYH-ET--AFTSLRFKNNCHSWYCCN--CSLE-NFGLCQTILRTSSNYNIKLR-EIS TTCV-QLYALCVYIIVPIVYFY-KYQF-N-SFTTYNYC-K-C-ECC-IMFGCRH-LCEVT QIF-IVHNRYVAIVVKYLLRFSNLCNCCFWCTLI-FWCSFLL-WR-RIVS-FV-RYYYGF L-RFFSLQHLFKWIRLP-FLSSS-NHSGDDFIVQARLDNFRSGR-VGFGIYVVHKILLFI RSFSYNAGVLWLFC-SFHQQFLAHVVYH-YCTNGTRFCNG-DVHLLCFFLLHMEELCSYH GWLHLFDLHDVL-AQSCHTR-VYNYC-WHEEIFLCLCKWRPWLLQDSQLELSQL-HILHW -YIH---SCS-FVTPV-KTNQPY-PVIVYC--CCCEKWRASPLL-QGWSKDL-ETSALPF CQFRQFES-QH-RFTAY-CHSF-WQVQMRRVCF-VCFCVLQSADVPTYSVA-PSSCIRRW R-Y-SFR-DV-CLCRHLFSNF-CSYGKT-GTCCYSSQRVSKGCSFRWCPFYIRVSCPTRC C-YRC-HKGCY-MSQTFTSL-LRSDR-QL-QFHAHL--G-KHDAQRSWRMY-L-CKAYQC PSSKKSQCFTHLECKRLHVFI-TAA-TNS-CCQEEQHTF-TNLCYN-TGCQCHNY-NLTQ GW-DC-YLF-TYA-GHIIVRSCCIGLLYRYASTYIVNP-WLHK-NHWLQSHSGWCHS-HH FY--LFCK-TCWF-RMV-PAWWFIQK-QKLPCSSCYHYKRDWFHSAWLTGYCAESNQW-L LAFSTSCF-CCWQHLLHTFQTH-V--FCYLCLRSCC-VYNF-GCYGOTCAILL-H-FARG FYFL--ASSRHSLCAYGWFHHTVS-HLPGGFC-SSNNF-C-VL-TWYMRKVRSRYLPIYO W-MGS---ALQSSIRSFLWC-CDESHS-HLYSSCATCGCFRCVCFSSGWWYYCHIGDLCC LLLYEIQTCFW-VQPCCCC-CTFVFDVFHYTLSGTSLQLSAGSLLSLLLVLDILFHO-CF ILGSPSMVCHVFSYCAFLDNSNLCILYFSEALPLVL-QLS-EKSHV-WSYI-YLRGGCFV

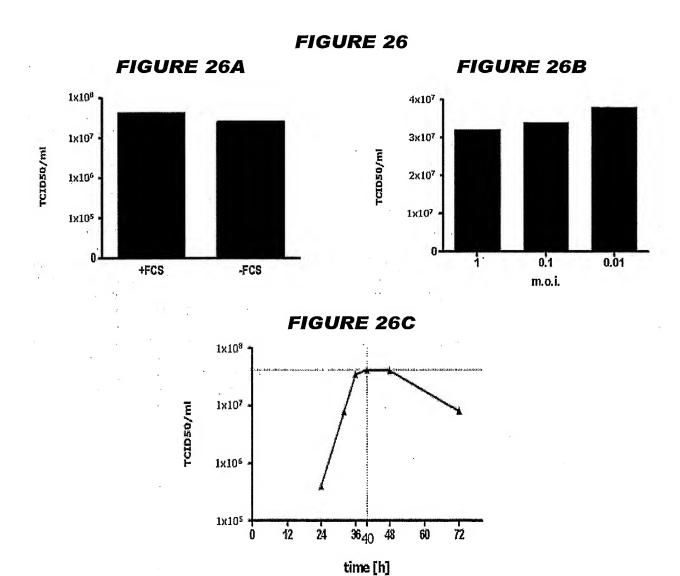
YLFAQQGNVPKIA-RDTVATYTV-QVSCSI-QVQVFQWSLRYYQLS-SSLLPLSKGSK-L -QLRC-CSLPTTTDINHFCCSAEWF-ENGIPVROS-RVHGTSNLWNYNS-WIVVG-HSIL SKTCHLHSRRHA-S-L-RSAHSQIQP-LSCSGWQCSTSCYWPFYAKLSA-A-S-YF-P-D TQV-ICPYPTWSNIFSSSMLQWFTIWCLSVCHET-SYH-RFFP-WIMW-CWF-H-L-LRV FLLYASYGASNRSTRWY-LRR-ILWSIC-QTNCTGCRYRHNHNIKCFGMAVCCCYOW--V VS--IHHYFE-L-PCGNEVQL-TFDTRSC-HIGTSFCSNRNCRLRYVCCFERAAAEWYEW SYYPW-HYFRR-VYTI-CC-TMLWCYLPR-VOENC-GHSSLDAFNFLDITIDSCSKYTVV TVFLCLRECFLAIYSWYYGNCCMCYAAC-A-ARILVLVSVTFSCNSCLL-YGLHAC-LGD AYHDMA-IG-H-LVWL-A-GLCYVCFSFSFAYSHDSSHCL--CC-TCLDTDECHYTCLQS LLW-CFRSSYFHVGLSYFCNL-LFWCRYDYHVFS-SYSVCVC-VLPIVIYYWOHLTVYHA CLLFLRLLLLLLWPFLFTQPLLQAYSWCL-LLGLYTRI-VYELPGAFAS-E-Y-CFOA-H-VVGYWR-TMYQGCYCTV-NV-RKVHICGTALGSSTT-SRVIF-IVGTMCTTPO-YSSC KRHN-SFREDGFSFVCFAIHAGCCRH--VVRGNAR-PCYSSGYCFRI-FFTIICRLCHCP GGL-AGCS-W-F-SRSQKVKEIFECG-I-V-P-CCHATQVGKDGRSGYDPNVQTGKI-GQ EGKSN-CYANNALHYA-EA---CT-QHYQQCA-WLCSTQHHTIDYSSQTHGCCP-LWYLQ EHL-W-HLYICICTLGNPASC-CG-QDCST--N-HGQFTKFGLASYCYSSKSQLSC-TTE --TESSSTTTDVLCGWYHTNSLY--QCTCLL-QFEGR-VCAGITIRPPRSQMG-IP-E-W YRYNLHRTGTTL-VCYRHTKRA-SEILVLHQRLKQPK-RYGAGQFSCYSTSSGWKCYRST CQFNCAFLLCFCSRPC-SI-GLPSKWRTTNHQLCEDVVYTHWYRTGNYCNTRS-HGPRVL WWCFMLSVL-MPH-PSKS-RIL-LER-VRPNTYHLC--PSGFYT-KHSLYRLRNVERLWL -L-PTPRTLDAVCGCINVFKRVCGVSAARLTPCGTGTSTDVVYRAFDIYNEKVAGFAKFL KTNCCRFQEKDEEGNLLDSYFVVKRHTMSNYOHEETIYNLVKDCPAVAVHDFFKFRVDGD MVPHISRQRLTKYTMADLVYALRHFDEGNCDTLKEILVTYNCCDDDYFNKKDWYDFVENP DILRVYANLGERVRQSLLKTVQFCDAMRDAGIVGVLTLDNQDLNGNWYDFGDFVQVAPGC GVPIVDSYYSLLMPILTLTRALAAESHMDADLAKPLIKWDLLKYDFTEERLCLFDRYFKY WDQTYHPNCINCLDDRCILHCANFNVLFSTVFPPTSFGPLVRKIFVDGVPFVVSTGYHFR ELGVVHNODVNLHSSRLSFKELLVYAADPAMHAASGNLLLDKRTTCFSVAALTNNVAFOT VKPGNFNKDFYDFAVSKGFFKEGSSVELKHFFFAQDGNAAISDYDYYRYNLPTMCDIRQL LFVVEVVDKYFDCYDGGCINANQVIVNNLDKSAGFPFNKWGKARLYYDSMSYEDODALFA YTKRNVIPTITQMNLKYAISAKNRARTVAGVSICSTMTNRQFHQKLLKSIAATRGATVVI GTSKFYGGWHNMLKTVYSDVETPHLMGWDYPKCDRAMPNMLRIMASLVLARKHNTCCNLS HRFYRLANECAOVLSEMVMCGGSLYVKPGGTSSGDATTAYANSVFNICOAVTANVNALLS TDGNKIADKYVRNLQHRLYECLYRNRDVDHEFVDEFYAYLRKHFSMMILSDDAVVCYNSN YAAQGLVASIKNFKAVLYYQNNVFMSEAKCWTETDLTKGPHEFCSQHTMLVKQGDDYVYL PYPDPSRILGAGCFVDDIVKTDGTLMIERFVSLAIDAYPLTKHPNQEYADVFHLYLQYIR KLHDELTGHMLDMYSVMLTNDNTSRYWEPEFYEAMYTPHTVLOAVGACVLCNSOTSLRCG ACIRRPFLCCKCCYDHVISTSHKLVLSVNPYVCNAPGCDVTDVTOLYLGGMSYYCKSHKP PISFPLCANGQVFGLYKNTCVGSDNVTDFNAIATCDWTNAGDYILANTCTERLKLFAAET LKATEETFKLSYGIATVREVLSDRELHLSWEVGKPRPPLNRNYVFTGYRVTKNSKVOIGE YTFEKGDYGDAVVYRGTTTYKLNVGDYFVLTSHTVMPLSAPTLVPQEHYVRITGLYPTLN ISDEFSSNVANYQKVGMQKYSTLQGPPGTGKSHFAIGLALYYPSARIVYTACSHAAVDAL CEKALKYLPIDKCSRIIPARARVECFDKFKVNSTLEQYVFCTVNALPETTADIVVFDEIS MATNYDLSVVNARLRAKHYVYIGDPAQLPAPRTLLTKGTLEPEYFNSVCRLMKTIGPDMF LGTCRRCPAEIVDTVSALVYDNKLKAHKDKSAQCFKMFYKGVITHDVSSAINRPQIGVVR EFLTRNPAWRKAVFISPYNSQNAVASKILGLPTQTVDSSQGSEYDYVIFTQTTETAHSCN VNRFNVAITRAKIGILCIMSDRDLYDKLQFTSLEIPRRNVATLQAENVTGLFKDCSKIIT GLHPTQAPTHLSVDIKFKTEGLCVDIPGIPKDMTYRRLISMMGFKMNYOVNGYPNMFITR EEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQLGFSTGVNLVAVPTGYVDTENNTEFTRV NAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQMLSDTLKGLSDRVVFVLWAHGFELTSMK YFVKIGPERTCCLCDKRATCFSTSSDTYACWNHSVGFDYVYNPFMIDVQQWGFTGNLQSN HDQHCQVHGNAHVASCDAIMTRCLAVHECFVKRVDWSVEYPIIGDELRVNSACRKVOHMV VKSALLADKFPVLHDIGNPKAIKCVPQAEVEWKFYDAQPCSDKAYKIEELFYSYATHHDK FTDGVCLFWNCNVDRYPANAIVCRFDTRVLSNLNLPGCDGGSLYVNKHAFHTPAFDKSAF TNLKQLPFFYYSDSPCESHGKQVVSDIDYVPLKSATCITRCNLGGAVCRHHANEYROYLD AYNMMISAGFSLWIYKQFDTYNLWNTFTRLQSLENVAYNVVNKGHFDGHAGEAPVSIINN AVYTKVDGIDVEIFENKTTLPVNVAFELWAKRNIKPVPEIKILNNLGVDIAANTVIWDYK

REAPAHVSTIGVCTMTDIAKKPTESACSSLTVLFDGRVEGQVDLFRNARNGVLITEGSVK GLTPSKGPAQASVNGVTLIGESVKTQFNYFKKVDGIIQQLPETYFTQSRDLEDFKPRSQM ETDFLELAMDEFIQRYKLEGYAFEHIVYGDFSHGQLGGLHLMIGLAKRSODSPLKLEDFI PMDSTVKNYFITDAQTGSSKCVCSVIDLLLDDFVEIIKSQDLSVISKVVKVTIDYAEISF MLWCKDGHVETFYPKLQASRAWQPGVAMPNLYKMQRMLLEKCDLQNYGENAVIPKGIMMN VAKYTQLCQYLNTLTLAVPYNMRVIHFGAGSDKGVAPGTAVLRQWLPTGTLLVDSDLNDF VSDAYSTLIGDCATVHTANKWDLIISDMYDPRTKHVTKENDSKEGFFTYLCGFIKOKLAL GGSIAVKITEHSWNADLYKLMGHFSWWTAFVTNVNASSSEAFLIGANYLGKPKEOIDGYT MHANYIFWRNTNPIQLSSYSLFDMSKFPLKLRGTAVMSLKENQINDMIYSLLEKGRLIIR ENNRVVVSSDILVNN-TNMFIFLLFLTLTSGSDLDRCTTFDDVQAPNYTQHTSSMRGVYY PDEIFRSDTLYLTQDLFLPFYSNVTGFHTINHTFGNPVIPFKDGIYFAATEKSNVVRGWV FGSTMNNKSOSVIIINNSTNVVIRACNFELCDNPFFAVSKPMGTOTHTMIFDNAFNCTFE YISDAFSLDVSEKSGNFKHLREFVFKNKDGFLYVYKGYQPIDVVRDLPSGFNTLKPIFKL PLGINITNFRAILTAFSPAQDIWGTSAAAYFVGYLKPTTFMLKYDENGTITDAVDCSQNP LAELKCSVKSFEIDKGIYQTSNFRVVPSGDVVRFPNITNLCPFGEVFNATKFPSVYAWER KKISNCVADYSVLYNSTFFSTFKCYGVSATKLNDLCFSNVYADSFVVKGDDVRQIAPGQT GVIADYNYKLPDDFMGCVLAWNTRNIDATSTGNYNYKYRYLRHGKLRPFERDISNVPFSP DGKPCTPPALNCYWPLNDYGFYTTTGIGYQPYRVVVLSFELLNAPATVCGPKLSTDLIKN OCVNFNFNGLTGTGVLTPSSKRFOPFOOFGRDVSDFTDSVRDPKTSEILDISPCAFGGVS VITPGTNASSEVAVLYQDVNCTDVSTAIHADQLTPAWRIYSTGNNVFQTQAGCLIGAEHV DTSYECDIPIGAGICASYHTVSLLRSTSQKSIVAYTMSLGADSSIAYSNNTIAIPTNFSI SITTEVMPVSMAKTSVDCNMYICGDSTECANLLLQYGSFCTQLNRALSGIAAEQDRNTRE VFAQVKQMYKTPTLKYFGGFNFSQILPDPLKPTKRSFIEDLLFNKVTLADAGFMKOYGEC LGDINARDLICAQKFNGLTVLPPLLTDDMIAAYTAALVSGTATAGWTFGAGAALOIPFAM QMAYRFNGIGVTQNVLYENQKQIANQFNKAISQIQESLTTTSTALGKLQDVVNQNAQALN TLVKQLSSNFGAISSVLNDILSRLDKVEAEVQIDRLITGRLQSLQTYVTQQLIRAAEIRA SANLAATKMSECVLGQSKRVDFCGKGYHLMSFPQAAPHGVVFLHVTYVPSQERNFTTAPA ICHEGKAYFPREGVFVFNGTSWFITQRNFFSPQIITTDNTFVSGNCDVVIGIINNTVYDP LQPELDSFKEELDKYFKNHTSPDVDLGDISGINASVVNIOKEIDRLNEVAKNLNESLIDL QELGKYEQYIKWPWYVWLGFIAGLIAIVMVTILLCCMTSCCSCLKGACSCGSCCKFDEDD SEPVLKGVKLHYT-TNLWICL-DFLLLDQLLHSQ-KLTMLLLQVLFMLQQRYRYKPHSLS DGLLLALHFLLFFRALPK-LRSIKDGS-PFIRASSSFAIYCCYLLPSIHIFCLSLOVWRR NFCTSMP-YIFYNASTHVELL-DVGFVGSANPRTHYFMMPTTLFAGTHITMTTVYHITVS QIQLSLLKVTAFQHQNSKKTTKLVVILRIGTQVLKTMSLYMAISPKFTTSLSLHKLLOTL VLKMLHSSSLTSLLKTHRMCKYTQSTALQELLIQQWIQFMMSRRRLLACLCKHKKVSTNL CTHSFRKKQVR--LIAYFFFLLSWYSC-SH-PSLLRFDCVRTAAILLT-V--NQRFTSTR VLKI-TLLKEFLIFWSKRTNYYYYSVWNFNIAYHGRQRYYYR-GA-TTPGTMEPSNRFPI PSLDYVTTICLF-SEQVFVHNKACFPLALVASNTCLFCACCCLQN-LGDWRDCDCNGLYC RLDVA-LLRCFLQAVCSYPLNVVIQPRNKHSSQCASPGDNCDQTAHGK-TCHWCCDHSWS LANGRTLPRAL-H-GPAKRDHCGYITNAFLLQIRSVAACRH-FRFCCIQPLPYWKL-IKY RPRR-ORQYCFASTVSDNRCFILLTSRLQ-QRY-LSL-GLSGLLFGILTL--VQ--DNYL SL-LRRIIRS-MMKNLWS-IIHKTNMKIILFLTLIVFTSCELYHYOECVRGTTVLLKEPC PSGTYEGNSPFHPLADNKFALTCTSTHFAFACADGTRHTYQLRARSVSPKLFIRQEEVQQ ELYSPLFLIVAALVFLILCFTIKRKTE-MSSL-LTSICAF-PFCYSLF--CLLYFGFHSK SRI-KNLVPKSKRT-NFSLF-LVFLYAVAYAL-YSAVHLINLMCLKILVRYNTRGNTYST AWLCALGKVLPFHRWHTMVQTCTPNVTINCQDPAGGALIARCWYLHEGHOTAAFRDVLVV LNKRTN-NV--WTPIKPT-CPPHYIWWTHRFN-O-PEWRTOWGKAKTAPTPRFTO-YCVL VHSSHSAWQGGT-IPSRPGRSNQHQ-WSR-PNWLLPKSYPTSSWW-RONERAQPOMVLLL PRNWPRSFTSLRR-QRRHRMGCN-GSLEYTQRPHWHPQS--QCCHRATTSSRNNIAKRLL RRGKQRRQSSLFSLLIT-SR-FKKFNSWQQ-GKFSCSNG-RRW-NCPRAIAARQIEPA-E QSFW-RPTTTRPNCH-EICC-GI-KASPKTYCHKTVQRHSSIWETWSRTNPRKFRGPRPN QTRN-LQTLAANCTICSKCLCILWNVTHWHGSHTFGNMADLSWSH-IG-ORSTIORORHT AEQAH-RIQNIPTNRA-KGQKEKD--SSAFAAETKEAAHCDSSSCG-HG-FLOTTSKFHE WSFC-FNSGINTHDDHTRQMGYVNVFAIPFTIHSLLLCRMNSRN-TAQVGLVNFNLT-QS LINV-H-GGLERATTFSSRPRGVRSRVQ-IMLGRAAYMEEP-CVKLILVVLSPCDFNSFL

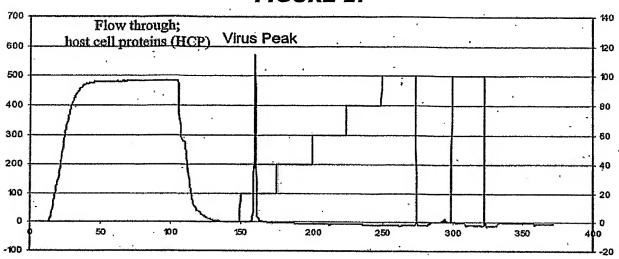
#### FIGURE 25

PTPRTLDAVCGCINVFKRVCGVSAARLTPCGTGTSTDVVYRAFDIYNEKVAGFAKFLKTNCCRFQE KDEEGNLLDSYFVVKRHTMSNYQHEETIYNLVKDCPAVAVHDFFKFRVDGDMVPHISRORLTKYTM ADLVYALRHFDEGNCDTLKEILVTYNCCDDDYFNKKDWYDFVENPDILRVYANLGERVROSLLKTV QFCDAMRDAGIVGVLTLDNQDLNGNWYDFGDFVQVAPGCGVPIVDSYYSLLMPILTLTRALAAESH MDADLAKPLIKWDLLKYDFTEERLCLFDRYFKYWDOTYHPNCINCLDDRCILHCANFNVLFSTVFP PTSFGPLVRKIFVDGVPFVVSTGYHFRELGVVHNQDVNLHSSRLSFKELLVYAADPAMHAASGNLL LDKRTTCFSVAALTNNVAFQTVKPGNFNKDFYDFAVSKGFFKEGSSVELKHFFFAODGNAAISDYD YYRYNLPTMCDIRQLLFVVEVVDKYFDCYDGGCINANQVIVNNLDKSAGFPFNKWGKARLYYDSMS YEDQDALFAYTKRNVIPTITQMNLKYAISAKNRARTVAGVSICSTMTNRQFHQKLLKSIAATRGAT VVIGTSKFYGGWHNMLKTVYSDVETPHLMGWDYPKCDRAMPNMLRIMASLVLARKHNTCCNLSHRF YRLANECAQVLSEMVMCGGSLYVKPGGTSSGDATTAYANSVFNICQAVTANVNALLSTDGNKIADK YVRNLQHRLYECLYRNRDVDHEFVDEFYAYLRKHFSMMILSDDAVVCYNSNYAAOGLVASIKNFKA VLYYQNNVFMSEAKCWTETDLTKGPHEFCSQHTMLVKQGDDYVYLPYPDPSRILGAGCFVDDIVKT DGTLMIERFVSLAIDAYPLTKHPNQEYADVFHLYLQYIRKLHDELTGHMLDMYSVMLTNDNTSRYW EPEFYEAMYTPHTVLQAVGACVLCNSQTSLRCGACIRRPFLCCKCCYDHVISTSHKLVLSVNPYVC NAPGCDVTDVTQLYLGGMSYYCKSHKPPISFPLCANGQVFGLYKNTCVGSDNVTDFNAIATCDWTN AGDYILANTCTERLKLFAAETLKATEETFKLSYGIATVREVLSDRELHLSWEVGKPRPPLNRNYVF TGYRVTKNSKVQIGEYTFEKGDYGDAVVYRGTTTYKLNVGDYFVLTSHTVMPLSAPTLVPQEHYVR ITGLYPTLNISDEFSSNVANYQKVGMQKYSTLQGPPGTGKSHFAIGLALYYPSARIVYTACSHAAV DALCEKALKYLPIDKCSRIIPARARVECFDKFKVNSTLEQYVFCTVNALPETTADIVVFDEISMAT NYDLSVVNARLRAKHYVYIGDPAQLPAPRTLLTKGTLEPEYFNSVCRLMKTIGPDMFLGTCRRCPA EIVDTVSALVYDNKLKAHKDKSAQCFKMFYKGVITHDVSSAINRPOIGVVREFLTRNPAWRKAVFI SPYNSQNAVASKILGLPTQTVDSSQGSEYDYVIFTQTTETAHSCNVNRFNVAITRAKIGILCIMSD RDLYDKLQFTSLEIPRRNVATLQAENVTGLFKDCSKIITGLHPTQAPTHLSVDIKFKTEGLCVDIP-GIPKDMTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQL -GFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQMLSDTLK GLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWNHSVGFDYVYNPFM IDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVKRVDWSVEYPIIGDELRVNS ACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEWKFYDAQPCSDKAYKIEELFYSYATH HDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLSNLNLPGCDGGSLYVNKHAFHTPAFDKSAFTNL KQLPFFYYSDSPCESHGKQVVSDIDYVPLKSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAG FSLWIYKOFDTYNLWNTFTRLOSLENVAYNVVNKGHFDGHAGEAPVSIINNAVYTKVDGIDVEIFE NKTTLPVNVAFELWAKRNIKPVPEIKILNNLGVDIAANTVIWDYKREAPAHVSTIGVCTMTDIAKK PTESACSSLTVLFDGRVEGQVDLFRNARNGVLITEGSVKGLTPSKGPAQASVNGVTLIGESVKTQF NYFKKVDGIIOOLPETYFTOSRDLEDFKPRSOMETDFLELAMDEFIORYKLEGYAFEHIVYGDFSH GQLGGLHLMIGLAKRSQDSPLKLEDFIPMDSTVKNYFITDAQTGSSKCVCSVIDLLLDDFVEIIKS QDLSVISKVVKVTIDYAEISFMLWCKDGHVETFYPKLQASRAWQPGVAMPNLYKMQRMLLEKCDLQ NYGENAVIPKGIMMNVAKYTQLCQYLNTLTLAVPYNMRVIHFGAGSDKGVAPGTAVLRQWLPTGTL LVDSDLNDFVSDAYSTLIGDCATVHTANKWDLIISDMYDPRTKHVTKENDSKEGFFTYLCGFIKOK LALGGSIAVKITEHSWNADLYKLMGHFSWWTAFVTNVNASSSEAFLIGANYLGKPKEOIDGYTMHA NYIFWRNTNPIQLSSYSLFDMSKFPLKLRGTAVMSLKENQINDMIYSLLEKGRLIIRENNRVVVSS DILVNN\*TNMFIFLLFLTLTSGSDLDRCTTFDDVQAPNYTOHTSSMRGVYYPDEIFRSDTLYLTOD LFLPFYSNVTGFHTINHTFGNPVIPFKDGIYFAATEKSNVVRGWVFGSTMNNKSOSVIIINNSTNV VIRACNFELCDNPFFAVSKPMGTOTHTMIFDNAFNCTFEYISDAFSLDVSEKSGNFKHLREFVFKN KDGFLYVYKGYOPIDVVRDLPSGFNTLKPIFKLPLGINITNFRAILTAFSPAODIWGTSAAAYFVG YLKPTTFMLKYDENGTITDAVDCSQNPLAELKCSVKSFEIDKGIYQTSNFRVVPSGDVVRFPNITN LCPFGEVFNATKFPSVYAWERKKISNCVADYSVLYNSTFFSTFKCYGVSATKLNDLCFSNVYADSF VVKGDDVRQIAPGQTGVIADYNYKLPDDFMGCVLAWNTRNIDATSTGNYNYKYRYLRHGKLRPFER DISNVPFSPDGKPCTPPALNCYWPLNDYGFYTTTGIGYQPYRVVVLSFELLNAPATVCGPKLSTDL IKNOCVNFNFNGLTGTGVLTPSSKRFOPFOOFGRDVSDFTDSVRDPKTSEILDISPCAFGGVSVIT PGTNASSEVAVLYQDVNCTDVSTAIHADQLTPAWRIYSTGNNVFQTQAGCLIGAEHVDTSYECDIP IGAGICASYHTVSLLRSTSQKSIVAYTMSLGADSSIAYSNNTIAIPTNFSISITTEVMPVSMAKTS VDCNMYICGDSTECANLLLQYGSFCTQLNRALSGIAAEQDRNTREVFAQVKQMYKTPTLKYFGGFN FSQILPDPLKPTKRSFIEDLLFNKVTLADAGFMKQYGECLGDINARDLICAQKFNGLTVLPPLLTD

DMIAAYTAALVSGTATAGWTFGAGAALQIPFAMQMAYRFNGIGVTQNVLYENQKQIANQFNKAISQ IQESLTTTSTALGKLQDVVNQNAQALNTLVKQLSSNFGAISSVLNDILSRLDKVEAEVQIDRLITG RLQSLQTYVTQQLIRAAEIRASANLAATKMSECVLGQSKRVDFCGKGYHLMSFPQAAPHGVVFLHV TYVPSQERNFTTAPAICHEGKAYFPREGVFVFNGTSWFITQRNFFSPQIITTDNTFVSGNCDVVIG IINNTVYDPLQPELDSFKEELDKYFKNHTSPDVDLGDISGINASVVNIQKEIDRLNEVAKNLNESL IDLQELGKYEQYIKWPWYVWLGFIAGLIAIVMVTILLCCMTSCCSCLKGACSCGSCCKFDEDDSEP VLKGVKLHYT\*



#### FIGURE 27



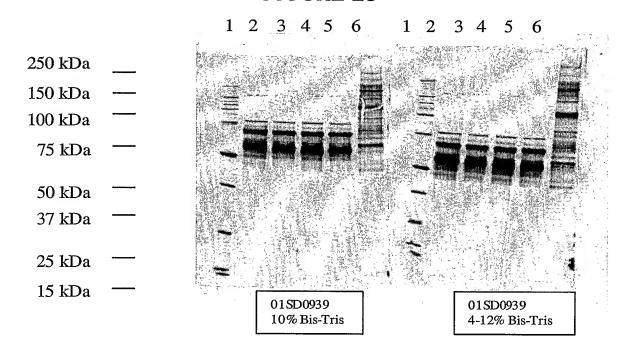
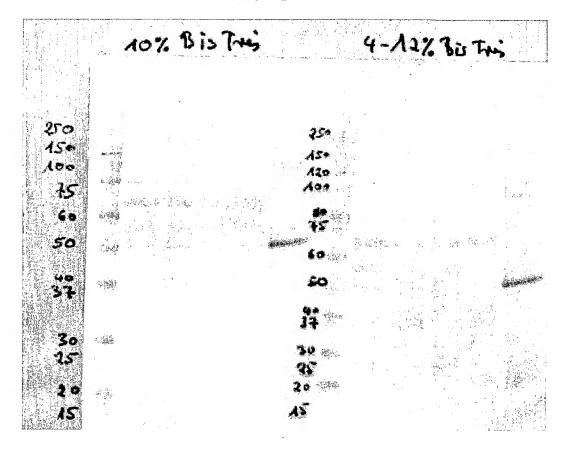
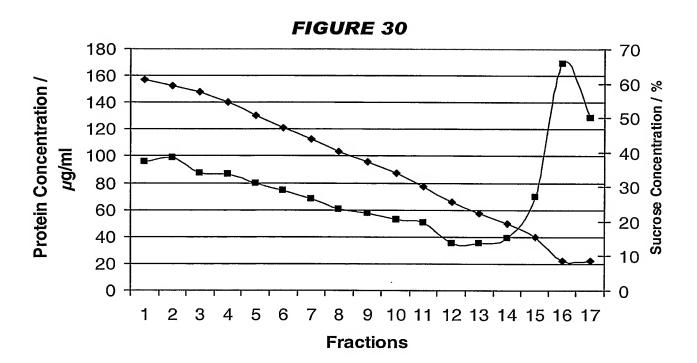


FIGURE 29





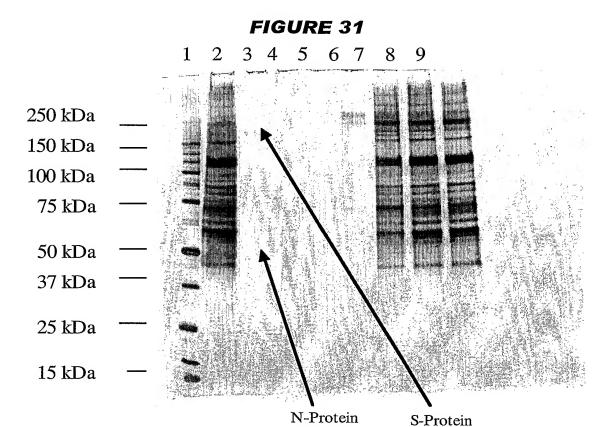
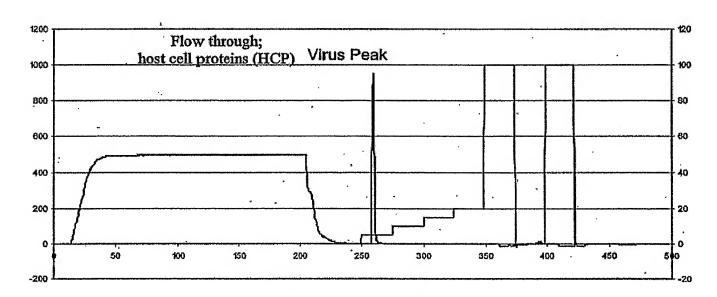


FIGURE 32



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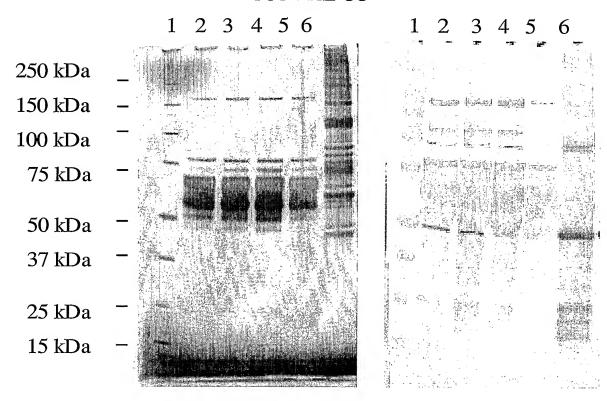
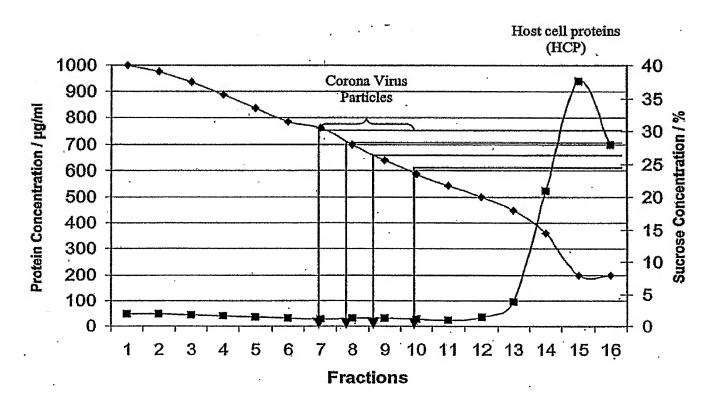


FIGURE 34



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#### FIGURE 35

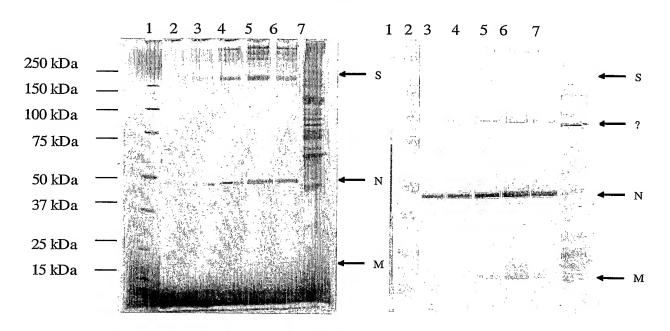
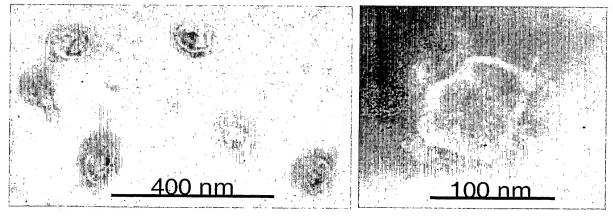


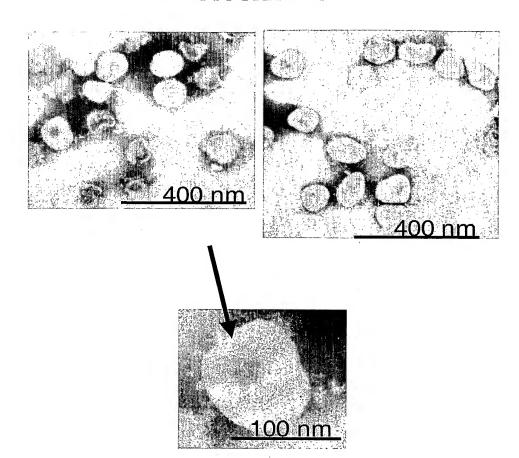
FIGURE 36A
400 nm 100 nm

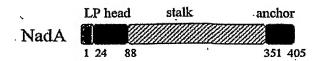
FIGURE 36B



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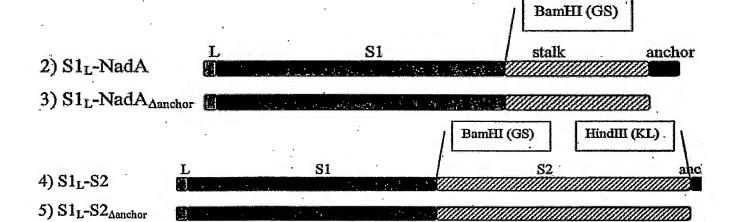
# FIGURE 36C











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FIGURE 38

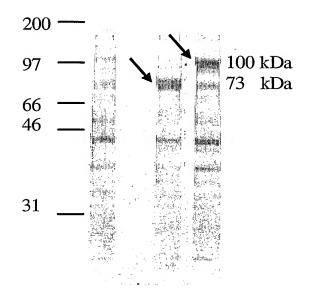
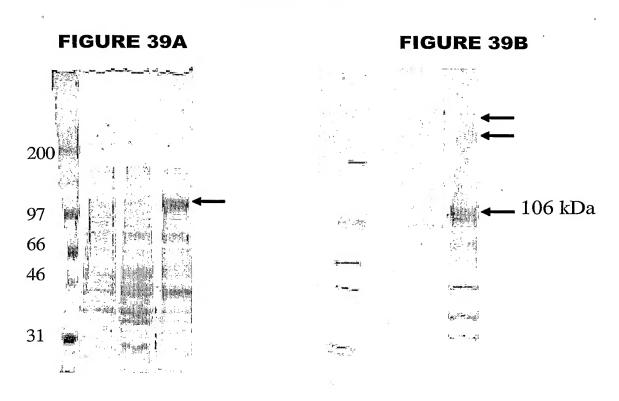
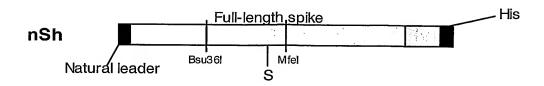
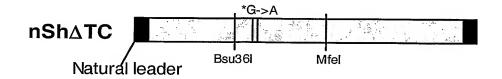
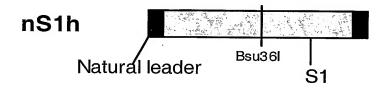


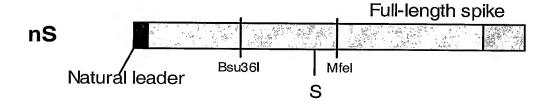
FIGURE 39

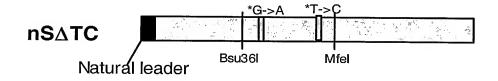


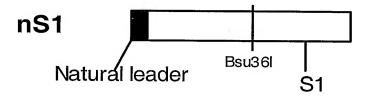




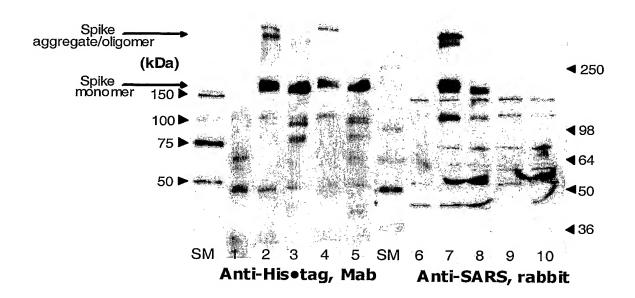


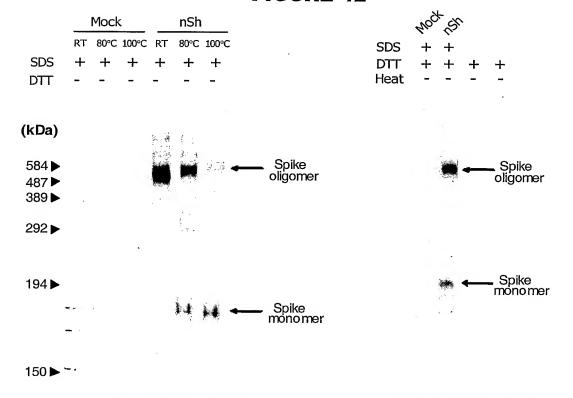












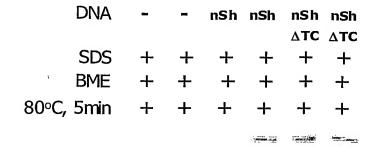
Anti-SARS, rabbit

Anti-His•tag, Mab

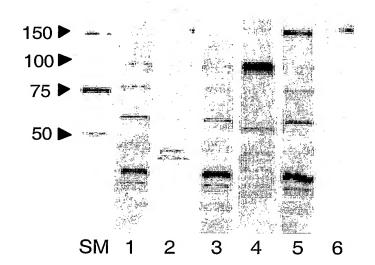
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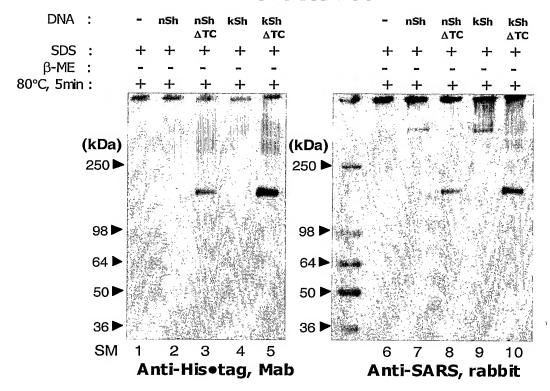
# FIGURE 43

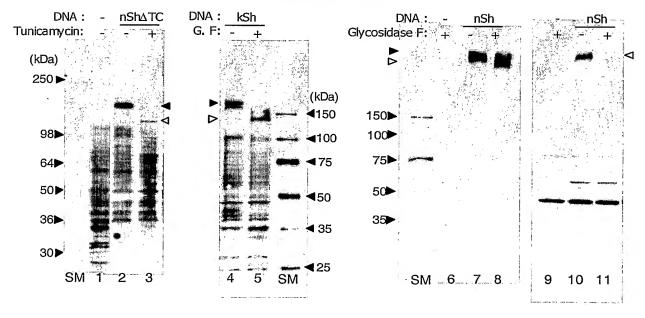


(kDa)

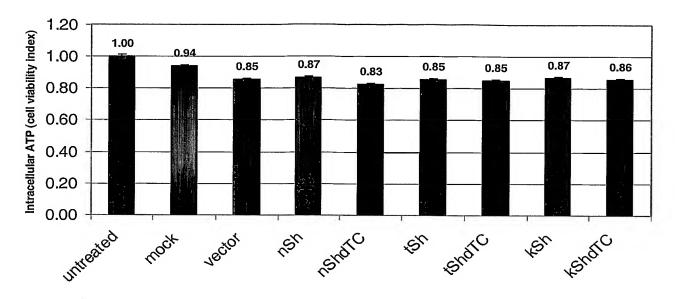


## FIGURE 44

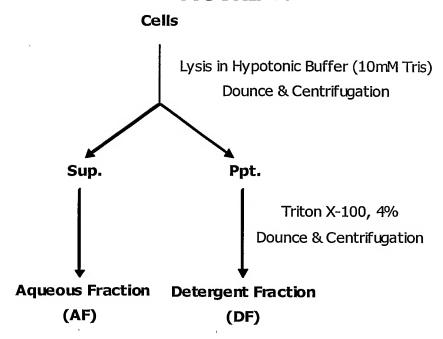


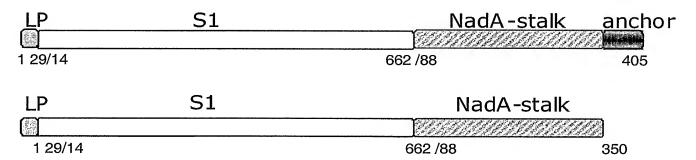


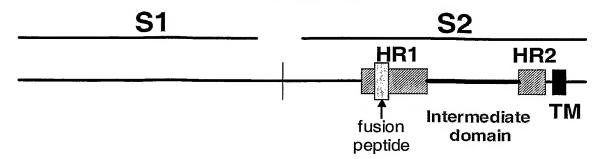
## FIGURE 46



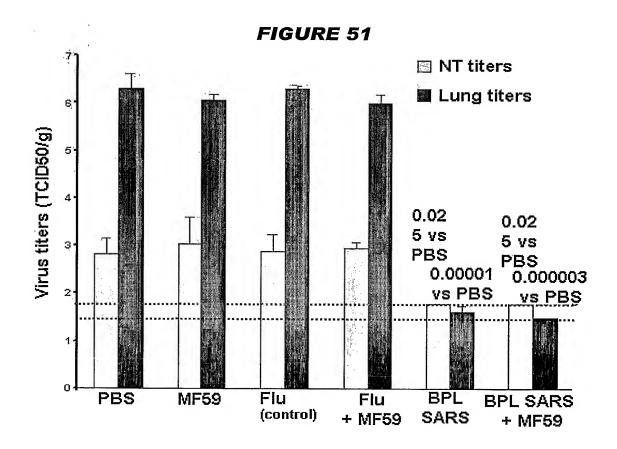
		Moc	<u>k_</u>					nSh					_				Mock	(				nSh		
Fraction	9	10	11	7	8	9	10	11	12	13	14	15	16	Fraction	10	11	12	13	14	10	11	12	13	14
SDS DTT	+	+	+	+	+	+	+	+	+	+	+	+	+	SDS	+	+	+	+	+	+	+	+	+	+
Heat	+	+	-	+	+	+	-	+	+	+	+	+	+	DTT		+	+	+	+	+	+	+	+	+
-						•	***							80°C, 5min	+	+	+	+	+	+	+	+	+	+
														(kDa)					•					
E04	77													584▶										
584 <b>►</b> 487 <b>►</b>							diam.	-						487▶ -										
							\$200 m	- Control of the Cont						389▶										
														292▶										
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							elifer u	Y. Mar. 1	·					194▶					d			الأحداثات		
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150 ►														150▶					1					
															1-		-		-					







- a) Leader(NadA)-HR1-GGGGGG-HR2-GGGGSG-stalk(NadA)-anchor(NadA)
- b) Leader(NadA)-HR1-GGGGGG-HR2-GGGGSG-stalk(NadA)
- c) Leader(NadA)-HR1-intermediate-domain-HR2-GGGGSG-stalk(NadA)-anchor(NadA)
- d) Leader(NadA)-HR1-intermediate-domain-HR2- GGGGSG-stalk(NadA)
- e) HR1-intermediate-domain-HR2- GGGGSG-stalk(NadA) HHHHHH
- f) Leader(NadA)-HR1-intermediate-domain-HR2-anchor(NadA)
- g) Leader(NadA)-HR1-intermediate-domain-HR2



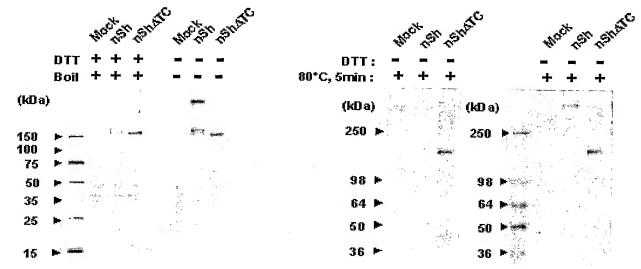
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## FIGURE 52

A. 293 cell lysates

B. COS7 cell culture supernatants



Anti-His • tag, mAb

Anti-His • tag, mAb

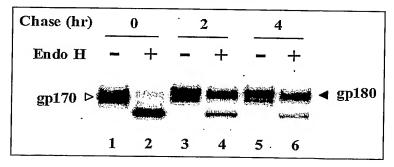
Anti-SARS, rabbit

4-20% TG SDS gel

FIGURE 53

4-20% TG SDS gel

Mock	nSh <sub>.</sub>	nSh∆TC	
T 80°C 100°C	RT 80*C 100*	C RT 80*C 100*	c
		<b>原文</b> 语 <del>阿二</del> 语	<b>≈</b> 669
			◀ 440
•	•	/	<b>4</b> 232
Marine sing			



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FIGURE 54

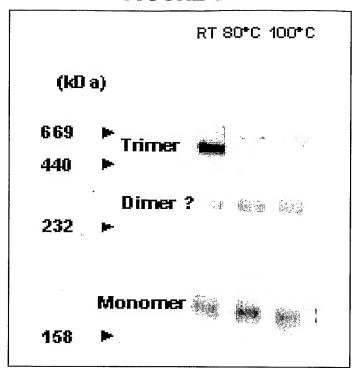
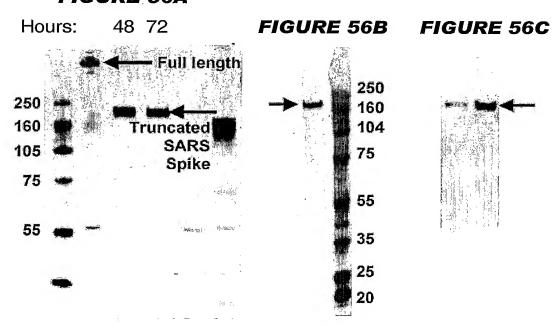
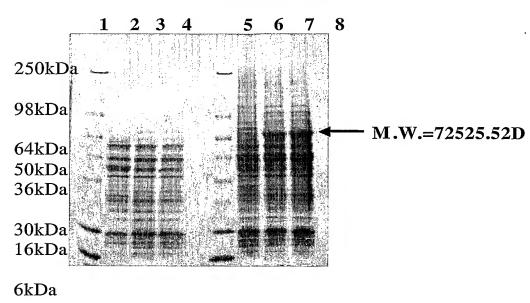


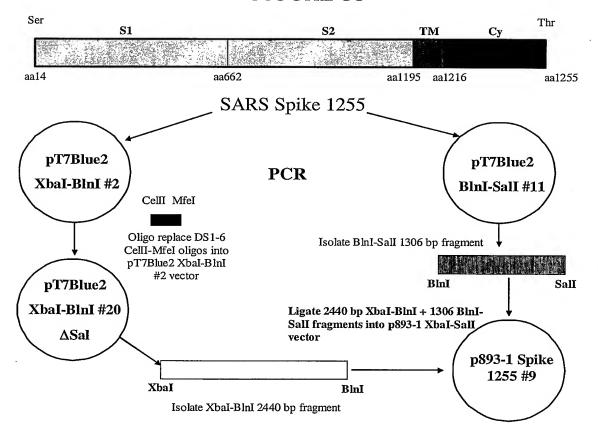
FIGURE 56

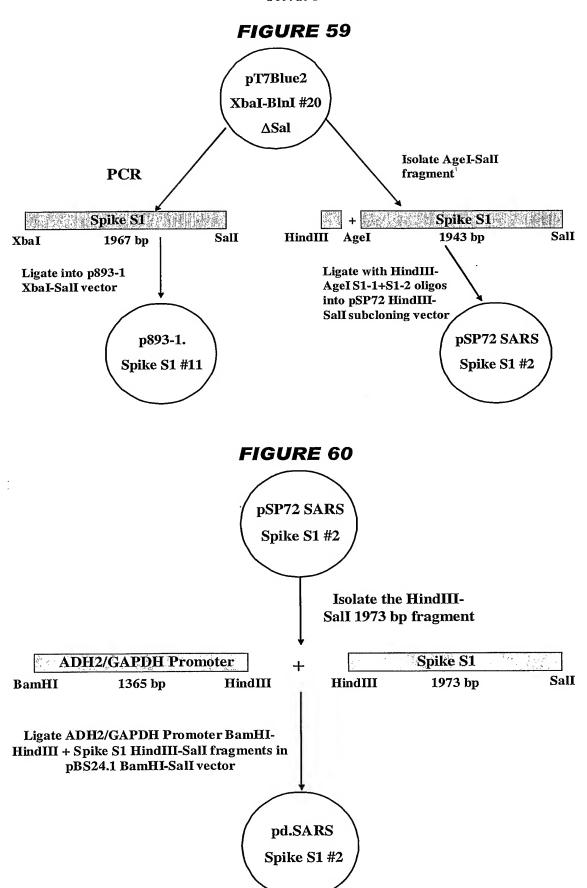
### FIGURE 56A



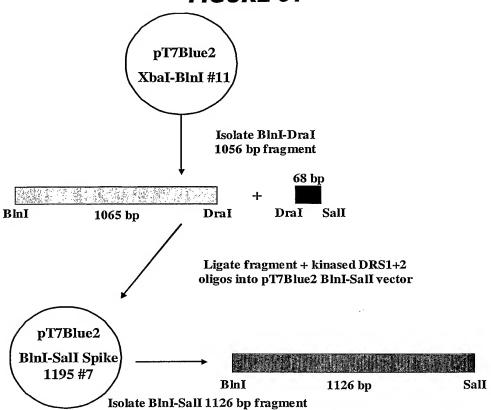
## FIGURE 57

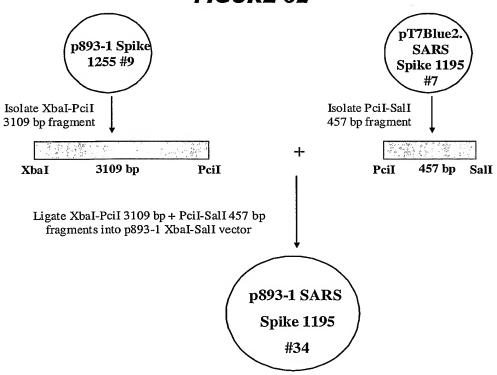


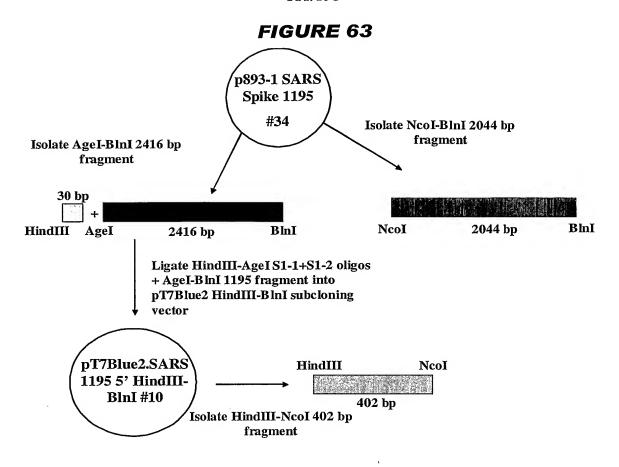


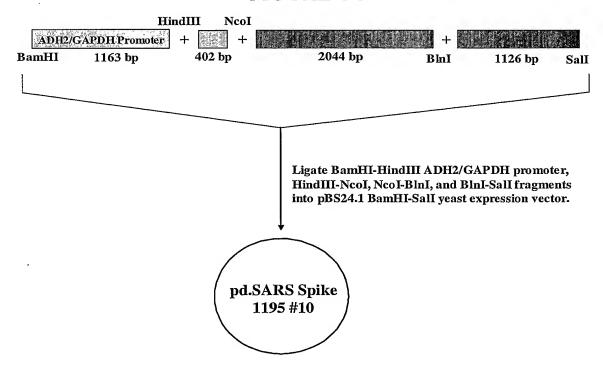


## FIGURE 61









AAGCTTACAAAACAAA	D L GAC CTT				
D D V Q A GAT GAT GTT CAA GCT					
R G V Y Y AGG GGG GTT TAC TAT					
Y L T Q D TAT TTA ACT CAG GAT					
GGG TTT CAT ACT ATT					
F K D G I TTT AAG GAT GGT ATT					V GTT
90 V R G W V GTC CGT GGT TGG GTT					
S V I I I TCG GTG ATT ATT ATT					A GCA
C N F E L TGT AAC TTT GAA TTG			V GTT		130 K AAA
P M G T Q CCC ATG GGT ACA CAG					
N C T F E AAT TGC ACT TTC GAG	S D TCT GAT	S r tcg			160 V GTT
S E K S G TCA GAA AAG TCA GGT		E A GAG		-	F TTT
180 K N K D G AAA AAT AAA GAT GGG	Y V TAT GTT	G G GGC			190 P CCT

		V GTA												
P CCT		F TTT											F TTT	
		L CTT												
		A GCA												
		K AAG											V GTT	_
C TGT		Q CAA												
		I ATT									N			V GTT
		S TCA									I ATT			310 L TTG
		F TTT											S TCT	
Y TAT	A GCA	W TGG	E GAG	330 R AGA	K AAA	K AAA	I ATT	S TCT	N AAT	C TGT	V GTT	A GCT	D GAT	340 Y TAC
S TCT	V GTG	L CTC	Y TAC	N AAC	S TCA	T ACA	F TTT	F TTT	350 S TCA	T ACC	F TTT	K AAG	C TGC	Y TAT
G GGC	V GTT	S TCT	A GCC	360 T ACT	K AAG	L TTG	N AAT	D GAT	L CTT	C TGC	F TTC	S TCC	N AAT	370 V GTC
Y TAT	A GCA	D GAT	S TCT	F TTT	V GTA	V GTC	K AAG	G GGA	380 D GAT	D GAT	V GTA	R AGA	Q CAA	I ATA
A GCG	P CCA	G GGG	Q CAA	390 T ACT	G GGT	V GTT	I ATT	A GCT	D GAT	Y TAT	N AAT	Y TAT	K AAA	400 L TTG

410 F M G C V L D D  $\mathbf{A}$ W N T R N CCA GAT GAT TTC ATG GGT TGT GTC CTT GCT TGG AAT ACT AGG AAC 420 430 S  $\mathbf{T}$ G N Y $\mathbf{N}$ Y K Y Y ATT GAT GCT ACT TCA ACT GGT AAT TAT AAA TAT AGG TAT 440 R Η G K L R Р  $\mathbf{F}$ E R I D CTT AGA CAT GGC AAG CTT AGG CCC TTT GAG AGA GAC ATA TCT AAT 450 460 V P F S P GKPCTPPA D GTG CCT TTC TCC CCT GAT GGC AAA CCT TGC ACC CCA CCT GCT CTT 470  $\mathbf{N}$ C P L Y W  $\mathbf{N}$ D Y G F Y Т AAT TGT TAT TGG CCA TTA AAT GAT TAT GGT TTT TAC ACC ACT ACT 480 490 G Y I Q P  $\mathbf{Y}$ R V V V L S  $\mathbf{E}$ GGC ATT GGC TAC CAA CCT TAC AGA GTT GTA GTA CTT TCT TTT GAA 500 T V C L Α P A G  $\mathbf{L}$ Ρ K L S CTT TTA AAT GCA CCG GCC ACG GTT TGT GGA CCA AAA TTA TCC ACT 510 520 I K N Q C V N F N F N G L GAC CTT ATT AAG AAC CAG TGT GTC AAT TTT AAT TTT AAT GGA CTC 530 G V T P S L S K R F ACT GGT ACT GGT GTG TTA ACT CCT TCT TCA AAG AGA TTT CAA CCA 540 550 0 G R D V S D  $\mathbf{F}$  $\mathbf{T}$ D TTT CAA CAA TTT GGC CGT GAT GTT TCT GAT TTC ACT GAT TCC GTT 560 R K T S E I L D S C S I Ρ CGA GAT CCT AAA ACA TCT GAA ATA TTA GAC ATT TCA CCT TGC TCT 570 580 G G V S V  ${f T}$ P G T I N A S TTT GGG GGT GTA AGT GTA ATT ACA CCT GGA ACA AAT GCT TCA TCT 590 Y V L Q D V  $\mathbf{N}$ C  $\mathbf{T}$ D GAA GTT GCT GTT CTA TAT CAA GAT GTT AAC TGC ACT GAT GTT TCT 600 610  $\mathbf{T}$ I  $\mathbf{H}$ А Q L  $\mathbf{T}$ Ρ D Α Y W R I ACA GCA ATT CAT GCA GAT CAA CTC ACA CCA GCT TGG CGC ATA TAT

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620

S  $\mathbf{T}$ G V F  $\mathbf{T}$ N $\mathbf{N}$ Α G C I Q Q L TCT ACT GGA AAC AAT GTA TTC CAG ACT CAA GCA GGC TGT CTT ATA

630 640 G A E H V D T · S Y E C D I P I

 ${\tt G}$  A E H V D T  ${\tt S}$  Y E C D I P I  ${\tt GGA}$  GCT GAG CAT GTT GAT ACT TCT TAT GAG TGC GAC ATT CCT ATT

650

G, A G I C A S Y H T OC SEQ ID NO: 9799 GGA GCT GGC ATT TGT GCT AGT TAC CAT ACA TAA TGAGTCGAC SEQ ID NO: 9800

Translated Mol. Weight = 72525.52

### FIGURE 66

1 10 M S D L D  $\mathbb{R}$ C  $\mathbf{T}$  $\mathbf{T}$ F AAGCTTACAAAACAAA ATG AGT GAC CTT GAC CGG TGC ACC ACT TTT 20 Α Ρ N Y Т S 0 Η GAT GAT GTT CAA GCT CCT AAT TAC ACT CAA CAT ACT TCA TCT ATG 30 40 R G Y Y Ρ D  $\mathbf{E}$ Ι F R S D  $\mathbf{T}$ AGG GGG GTT TAC TAT CCT GAT GAA ATT TTT AGA TCA GAC ACT CTT 50 Ρ Y F F Y S  $\mathbf{N}$ .L Q  $\mathbf{D}$ L L TAT TTA ACT CAG GAT TTA TTT CTT CCA TTT TAT TCT AAT GTT ACA 60 70 G Ι Η  $\mathbf{T}$ F G  $\mathbf{N}$ GGG TTT CAT ACT ATT AAT CAT ACG TTT GGC AAC CCT GTC ATA CCT 80 K G I Y F  $\mathbf{T}$ S V Α Α E K  $\mathbf{N}$ TTT AAG GAT GGT ATT TAT TTT GCT GCC ACA GAG AAA TCA AAT GTT 90 100  $\mathbf{T}$ V G V G RW F S  $\mathbf{M}$  $\mathbf{N}$ Ν K S O GTC CGT GGT TGG GTT TTT GGT TCT ACC ATG AAC AAC AAG TCA CAG 110 I  $\mathbf{N}$ N S  $\mathbf{T}$ V V I NTCG GTG ATT ATT AAC AAT TCT ACT AAT GTT GTT ATA CGA GCA 120 130 C F  $\mathbf{N}$ F E L C D  $\mathbf{N}$ Ρ F Α V K TGT AAC TTT GAA TTG TGT GAC AAC CCT TTC TTT GCT GTT TCT AAA 140 P G Т Q Т  $\mathbf{T}$ I M Η Μ F Α D NCCC ATG GGT ACA CAG ACA CAT ACT ATG ATA TTC GAT AAT GCA TTT 150 160  $\mathbf{T}$ F N F  $\mathbf{E}$ Y I S D Α S V AAT TGC ACT TTC GAG TAC ATA TCT GAT GCC TTT TCG CTT GAT GTT

170 S  $\mathbf{E}$ K S G  $\mathbf{N}$ F H K L R Ε F V TCA GAA AAG TCA GGT AAT TTT AAA CAC TTA CGA GAG TTT GTG TTT 180 190 K K D G Y F L Y V K Y Q P AAA AAT AAA GAT GGG TTT CTC TAT GTT TAT AAG GGC TAT CAA CCT 200 Ι D V V  $\mathbf{R}$  $\mathbb{D}$ L Ρ S F G N Т L K ATA GAT GTA GTT CGT GAT CTA CCT TCT GGT TTT AAC ACT TTG AAA 210 220 Р Ι F K L Ρ L G I Ν I N CCT ATT TTT AAG TTG CCT CTT GGT ATT AAC ATT ACA AAT TTT AGA 230  $\mathbf{A}$ I  $\mathbf{T}$ S Α  $\mathbf{F}$ Ρ Α D 0 GCC ATT CTT ACA GCC TTT TCA CCT GCT CAA GAC ATT TGG GGC ACG 240 250 Α A Y V G Y F L K P  $\mathbf{T}$ F TCA GCT GCA GCC TAT TTT GTT GGC TAT TTA AAG CCA ACT ACA TTT 260 L K Y D Ε N G Т  $\mathbf{T}$ Т D Α ATG CTC AAG TAT GAT GAA AAT GGT ACA ATC ACA GAT GCT GTT GAT 270 280 0 Ρ L C S V N L A E K TGT TCT CAA AAT CCA CTT GCT GAA CTC AAA TGC TCT GTT AAG AGC 290 I D K G I Y 0 S F R N TTT GAG ATT GAC AAA GGA ATT TAC CAG ACC TCT AAT TTC AGG GTT 300 310 F S G D V P R  $\mathbf{N}$ I  $\mathbf{T}$ M GTT CCC TCA GGA GAT GTT GTG AGA TTC CCT AAT ATT ACA AAC TTG 320 С G  $\mathbf{E}$ V F Ν A  $\mathbf{T}$ K TGT CCT TTT GGA GAG GTT TTT AAT GCT ACT AAA TTC CCT TCT GTC 330 340 Ε R K K I S C  $\mathbf{N}$ V  $\mathbf{A}$ D Y TAT GCA TGG GAG AGA AAA AAA ATT TCT AAT TGT GTT GCT GAT TAC 350 Y  $\mathbf{N}$ S  $\mathbf{T}$ F F S т F K TCT GTG CTC TAC AAC TCA ACA TTT TTT TCA ACC TTT AAG TGC TAT 360 370 S Т Α С K L ND L F S  $\mathbf{N}$ V GGC GTT TCT GCC ACT AAG TTG AAT GAT CTT TGC TTC TCC AAT GTC 380  $\mathbf{F}$ V V K G D D V R TAT GCA GAT TCT TTT GTA GTC AAG GGA GAT GAT GTA AGA CAA ATA 390 400 G Α Ρ 0  $\mathbf{T}$ G V I Α D Y N Y K L GCG CCA GGG CAA ACT GGT GTT ATT GCT GAT TAT AAA TTG

	D		F											
CCA	GAT	GAT	TTC	ATG	GGT	TGT	GTC	CTT	GCT	TGG	AAT	ACT	AGG	AAC
I ATT		A GCT	T ACT		T ACT									430 Y TAT
	R AGA		G GGC									_		N AAT
		F TTC	S TCC	450 P CCT							P CCA			460 L CTT
N AAT			W TGG					Y TAT			Y TAC			T ACT
			Y TAC											490 E GAA
			A GCA									L TTA		T ACT
			K AAG											
			G GGT								R AGA			
			F TTT											550 V GTT
R CGA			K AAA											
			V GTA							T ACA		A GCT		580 S TCT
			V GTT											
	A GCA		H CAT											610 Y TAT
S TCT	T ACT	G GGA	N AAC		V GTA				620 Q CAA		G GGC			
G	A	E	Н	630 V	D	${f T}$	S	Y	E	С	D	I	P	640 I

GGA	GCT	GAG	CAT	GTC	GAC	ACT	TCT	TAT	GAG	TGC	GAC	ATT	CCT	ATT
		G			A							L		R
GGA	GCT	GGC	A.T.T.	1G1 660	GCT	AGT	TAC	CAT	ACA	GTT.	TCT	'I''I'A	TTA	CGT 670
S AGT				K	S TCT							S TCT		G
									680					-
A GCT					A GCT							A GCT	I ATA	P CCT
	27	-	a	690	a		m		_		3.5	-	~~	700
T ACT			S TCA		S AGC								-	S TCT
īΛī	<b>7</b> \	ĸ	т	q	V	D	C	ΝT	710 M	v	I	С	G	D
					GTA								_	
S	т	E	C.	720 A	N	L	L	L	O	Y	G	S	F	730 C
	_				AAT									
T	0	L	N	R	A	L	S	G	740 I	A	A	E	0	D
					GCA									
R	N	${f T}$	R	750 E	V	F	A	Q	V	K	Q	М	Y	760 K
CGC	AAC	ACA	CGT	GAA	GTG	TTC	GCT	CAA		AAA	CAA	ATG	TAC	AAA
					Y						F			
ACC	CCA	ACT	TTG		TAT	TTT	GGT	GGT	TTT	AAT	TTT	TCA	CAA	
L	P				K									790 D
TTA	CCT	GAC	CCT	CTA	AAG	CCA	ACT	AAG	AGG 800	TCT	TTT	ATT	GAG	GAC
					V				D					
T.T.G	CTC	.TTT.	AA'I'	810	GTG	ACA	CTC	GC.T.	GA'I'	GC'I'	GGC	TTC	ATG	820
				С	L CTA	G				A		D		I
CAA	TAT	GGC	GAA	160	CIA	GGI	GAI	WII	830	GCI	AGG	GAC	CIC	ATT
					N AAT				V					
				840										850
		D GAT			A GCT							V GTT		G GGT
т	7\	m.	74	C	T. 7	m.	To.	C	860	C	75	74	T	0
		T ACT			W TGG					G GGC		A GCT		
				870										880

I ATA	P CCT	F TTT	A GCT	M ATG	Q CAA	M ATG	A GCA	Y TAT	R AGG	F TTC	N AAT	G GGC	I ATT	G GGA
					L CTC									
	F TTT				I ATT	S AGT								
T ACA	S TCA	T ACT	A GCA	L TTG	G GGC	K AAG	L CTG	Q CAA	920 D GAC	V GTT	V GTT	N AAC	Q CAG	N AAT
A GCT					T ACA						S AGC			
	A GCA				V GTG									
K AAA	V GTC	E GAG	A GCG	960 E GAG	V GTA	Q CAA	I ATT	D GAC	R AGG	L TTA	I ATT	T ACA	G GGC	970 R AGA
L CTT	Q CAA	S AGC	L CTT	Q CAA	T ACC	Y TAT	V GTA	T ACA	980 Q CAA	Q CAA	L CTA	I ATC	R AGG	A GCT
	E GAA				S TCT						T ACT			1000 S TCT
					Q CAA					D				
					S TCC									
V GTC	F TTC	L CTA	H CAT	V GTC	T ACG	Y TAT	V GTG	P CCA	1040 S TCC	Q	E GAG	R AGG	N AAC	F TTC
					I ATT									
									1070	)				
R CGT	E GAA	G GGT	V GTT	F TTT	V GTG	F TTT	N AAT	G GGC	T ACT	s	W TGG	F TTT	I ATT	
CGT Q	GAA R	GGT N	GTT F	TTT 1080 F	GTG	TTT P	AAT Q	GGC I	ACT	S TCT T	TGG T	TTT D	ATT N	ACA 1090 T

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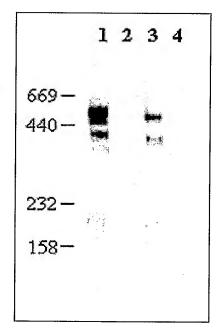
#### 120/193

1110 1120 D P L Q P E L D S F K ACA GTT TAT GAT CCT CTG CAA CCT GAG CTT GAC TCA TTC AAA GAA 1130 L D K Y F K N H T S P D VD GAG CTG GAC AAG TAC TTC AAA AAT CAT ACA TCA CCA GAT GTT GAT 1140 1150 F G D S G I A I N s v V N I Q TTT GGC GAC ATT TCA GGC ATT AAC GCT TCT GTC GTC AAC ATT CAA 1160 K  ${f E}$ IDRLN V  $\mathbf{E}$ A K N L NAAA GAA ATT GAC CGC CTC AAT GAG GTC GCT AAA AAT TTA AAT GAA 1170 1180 S L I D L Q E L G K Y E TCA CTC ATT GAC CTT CAA GAA TTG GGA AAA TAT GAG CAA TAT ATT 1183 K W P OC SEQ ID NO: 9801 AAA TGG CCT TAA TGAGTCGAC SEQ ID NO: 9802

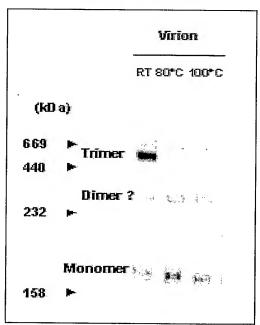
Translated Mol. Weight = 131315.20

## FIGURE 67

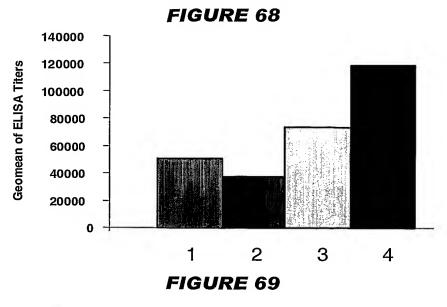
### FIGURE 67A

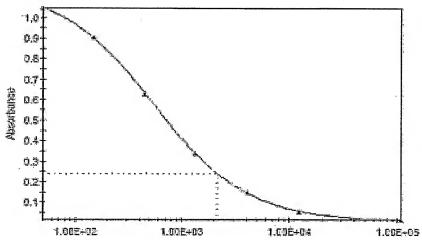


### FIGURE 67B









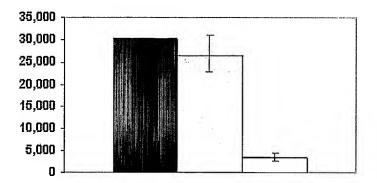


FIGURE 71

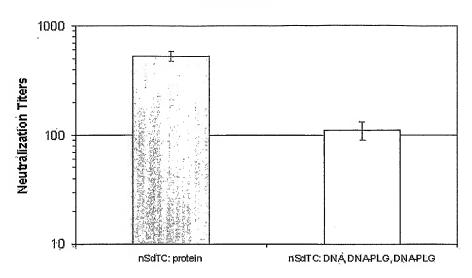
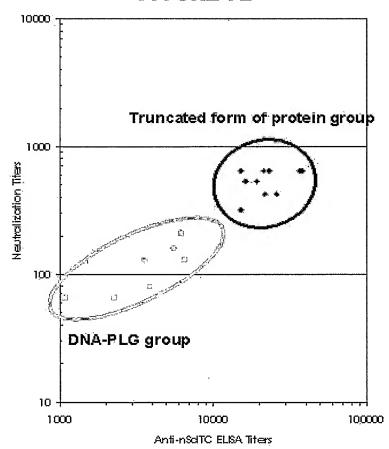
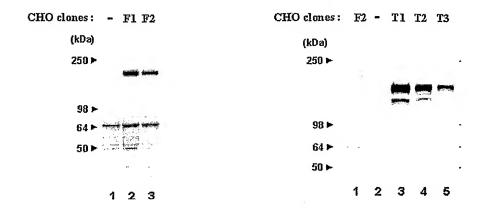


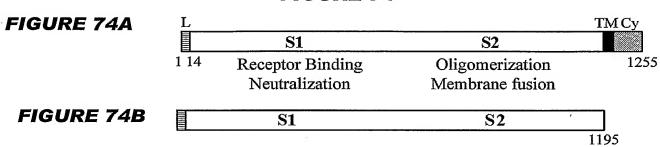
FIGURE 72



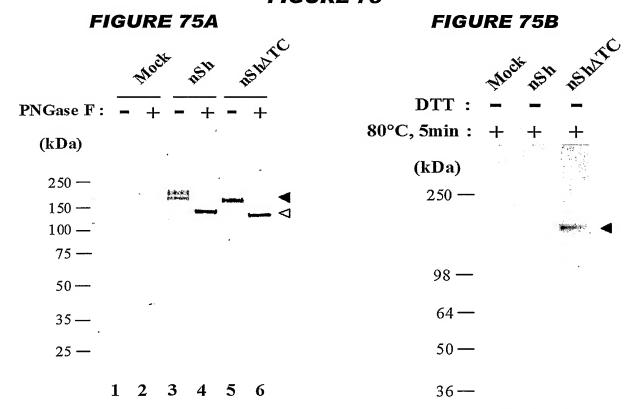
# FIGURE 73



### FIGURE 74



## FIGURE 75



1

2

3

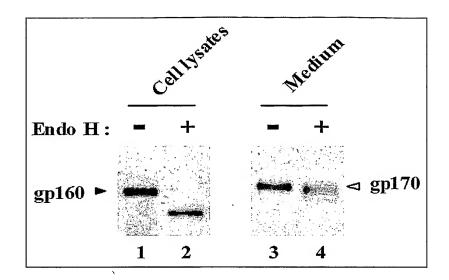


FIGURE 77

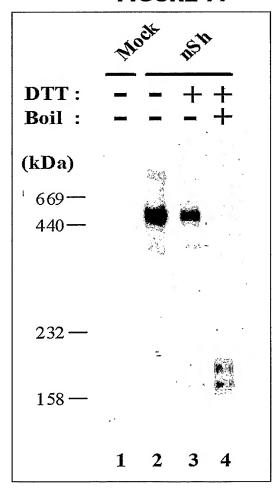


FIGURE 78

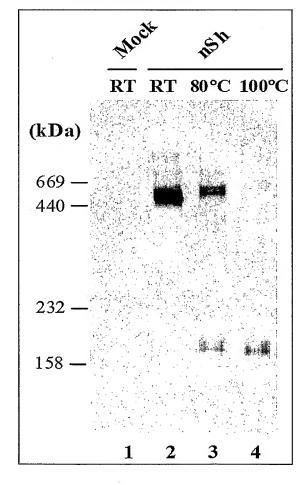


FIGURE 79

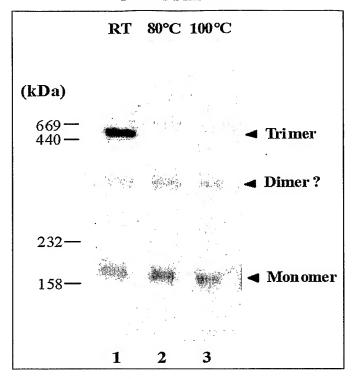


FIGURE 80

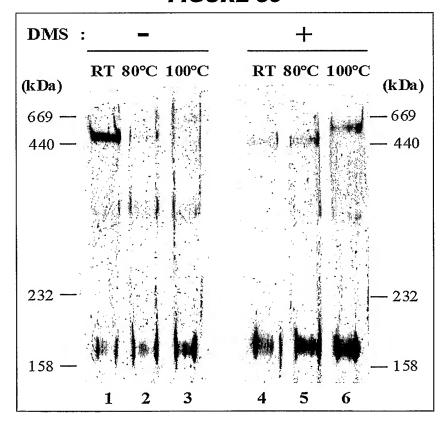


FIGURE 81

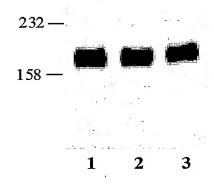
RT 80°C 100°C

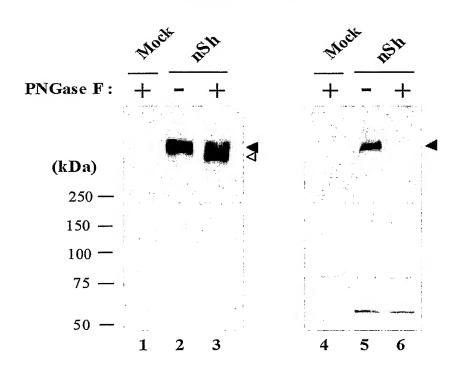
## FIGURE 82

RT 80°C 100°C

1

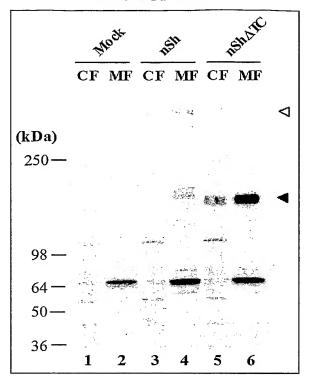
3





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FIGURE 84



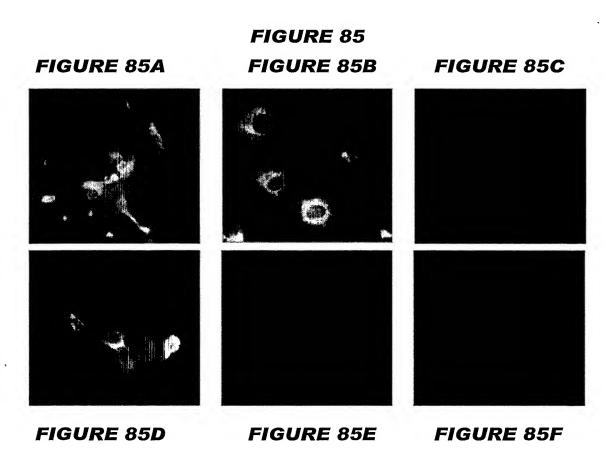


FIGURE 86

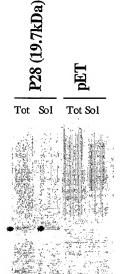


FIGURE 87



FIGURE 88

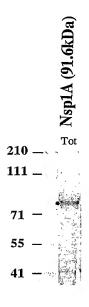
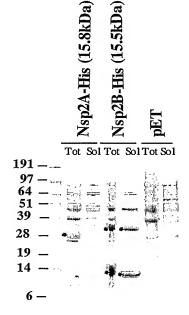
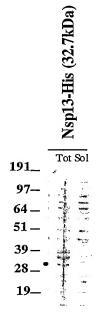
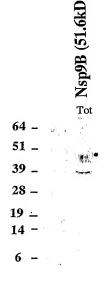


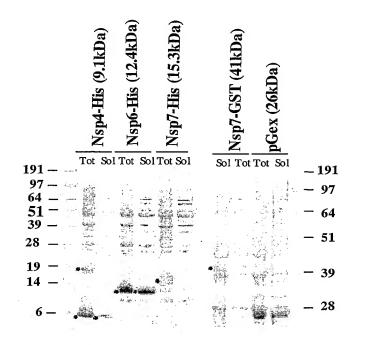
FIGURE 89

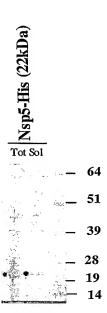






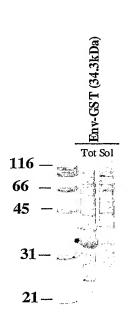


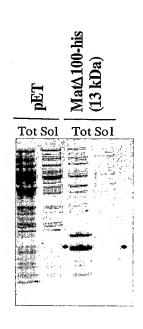




### FIGURE 94

FIGURE 95





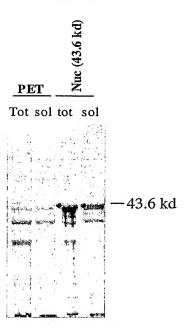


FIGURE 97

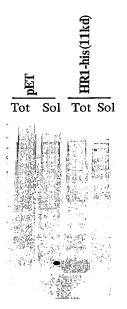


FIGURE 98

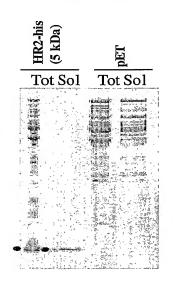


FIGURE 99

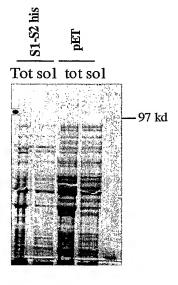
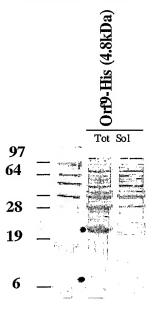


FIGURE 100







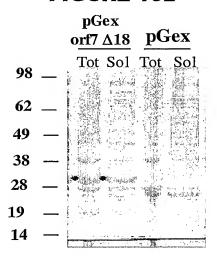


FIGURE 103

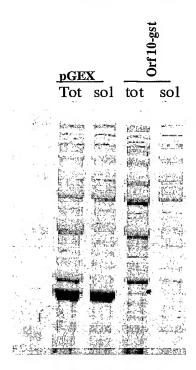


FIGURE 104

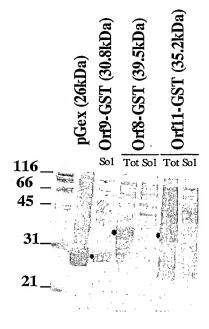


FIGURE 105

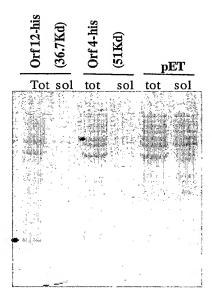


FIGURE 106

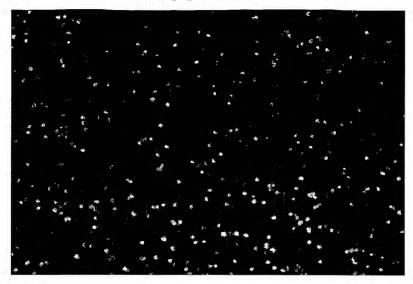


FIGURE 107

FIGURE 107A

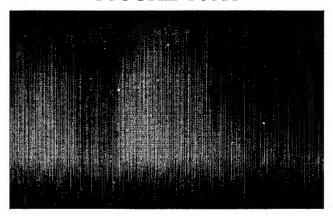


FIGURE 107B



FIGURE 108

FIGURE 108A

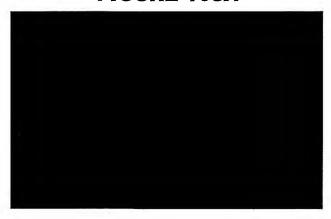
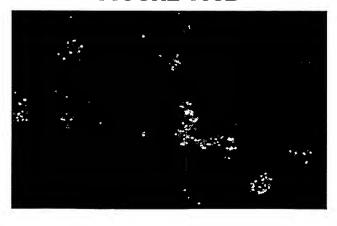


FIGURE 108B



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FIGURE 109 S1 S1-S2

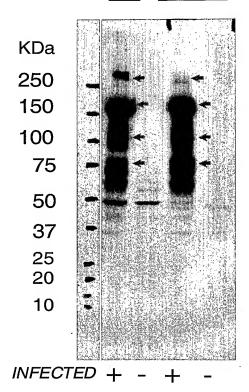
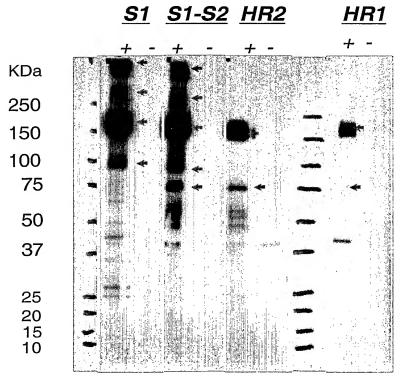
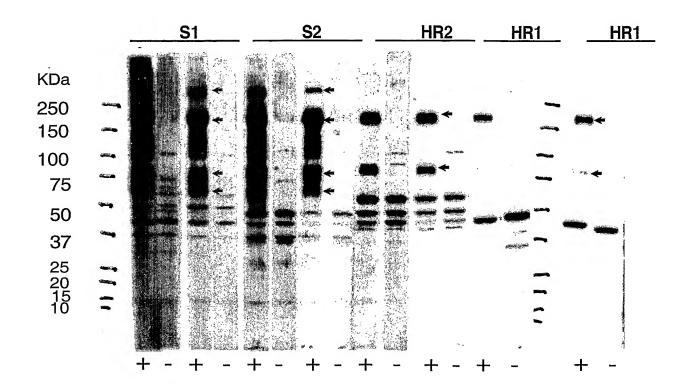
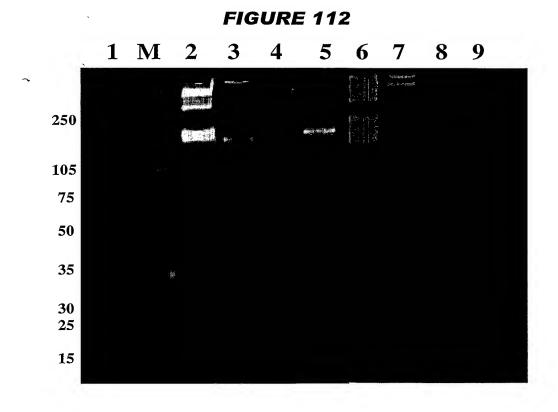


FIGURE 110







#### FIGURE 113

#### 5'3' Frame 1

PKDMTYVDSSL-WVS-ITKSMVTLICLSPAKKLFVTFVRGLALM-RAVMQLEMLWVLTYL SS-DFLQVLT--LYRLVMLTLKITQNSPELMHKPPPVSSLNILYHSCIKACPGM-CVLR-YKCSVIH-KDCQTESCSSFGRMALSLHQ-STLSRLDLKERVVCVTNVQLAFLLHQILMPA GIILWVLTMSITHL-LMFSSGGFTGNLSE-P-PTLPGTWKCTCGLVVML

#### 5'3' Frame 2

QRT-PT-THLYDGFQNELPSQWLP-YVYHPRRSYSSRSCVDWL-CRGLSCN-RCCGY-PT SPARIFYRC-LSSCTDWLC-H-K-HKIHQS-CTNLHQ-AV-TSYTTHV-RLALECSAY-D STNAQ-YTERIVRQSRVRPLGAWL-AYINEVLCQDWT-KNVLSV-QTCNLLFYFIRYLCL LESFCGF-LCL-PIYD-CSAVGALRVTFQSNHDQHCQVHGNAHVG-L-C

#### 5'3' Frame 3

KGHDLRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLP LQLGFSTGVNLVAVPTGYVDTENNTKFTRVNAQTSTSEQFKHLIPLMYKGLPWNVVRIKI VQMLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYAC WNHSVGFDYVYNPFMIDVQQWGLYG-PFRVTMTNIARYMEMHMWASCDA

#### 3'5' Frame 1

-HHN-PTCAFPCTWQCWSWLL-KVTRKAPTAEHQS-MGYRHSQNPQNDSSRHKYLMK-KS KLHVCHTDNTFFQVQS-QSTSLM-AQSHAPKGRTRLCLTILSVYH-AFVLS-YALHSRAS LYT-VV-DV-TAHWWRFVH-LW-ILCYFQCQHNQSVQLLS-HL-KILAGEVG-YPQHL-L HDSPLHQSQSTHERDE-LLRG--TY-GNH-LGNSF-NPS-R-VYVGHVLW

#### 3'5' Frame 2

SITTSPHVHFHVPGNVGHGYSERLPVKPPLLNINHKWVIDIVKTHRMIPAGISI--SRKA SCTFVTQTTRSFRSNLDKVLH-CKLKAMRPKDEHDSV-QSFQCITEHLYYLNTHYIPGQA FIHEWYKMFKLLTGGGLCINSGEFCVIFSVNITSRYSY-VNTCRKS-LER-VSTHSISSC MTALYIKANPRTNVTNSFFAGDKHIRVTIDLVIHFETHHRDEST-VMSF

### 3'5' Frame 3

ASQLAHMCISMYLAMLVMVTLKGYP-SPHC-TSIINGL-T-SKPTE-FQQA-VSDEVEKQ VARLSHRQHVLSGPILTKYFIDVSSKPCAQRTNTTLSDNPFSVSLSICTILIRTTFQGKP LYMSGIRCLNCSLVEVCALTLVNFVLFSVST-PVGTATKLTPVENPSWRGRLVPTASLVA -QPSTSKPIHART-RIASSRVINILG-PLTW-FILKPIIEMSLRRSCPL

#### FIGURE 114

#### 5'3' Frame 1

YRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQLG FSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLI

#### 5'3' Frame 2

TVDSSL-WVSK-ITKSMVTLICLSPAKKLFVTFVRGLALM-RAVMQLEMLWVLTYLSS-D FLQVLT--LYRLVMLTLKITONSPELMONLHOVTSLNILY

#### 5'3' Frame 3

P-THLYDGFQNELPSQWLP-YVYHPRRSYSSRSCVDWL-CRGLSCN-RCCGY-PTSPARI FYRC-LSSCTDWLC-H-K-HRIHQS-CKTSTR-PV-TSYT

#### 3'5' Frame 1

GIRCLNWSPGGGFALTLVNSVLFSVST-PVGTATKLTPVENPSWRGRLVPTASLVA-QPSTSKPIHART-RIASSRVINILG-PLTW-FILKPIIEMSLR

### 3'5' Frame 2

V-DV-TGHLVEVLH-LW-ILCYFQCQHNQSVQLLS-HL-KILAGEVG-YPQHL-LHDSPL HQSQSTHERDE-LLRG--TY-GNH-LGNSF-NPS-R-VYG

#### 3'5' Frame 3

YKMFKLVTWWRFCINSGEFCVIFSVNITSRYSY-VNTCRKS-LER-VSTHSISSCMTALY IKANPRTNVTNSFFAGDKHIRVTIDLVIHFETHHRDESTV

# FIGURE 115

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# FIGURE 115 (contd.)

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(1)						- · · · · · · · · · · · · · · · · · · ·
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			LMGFKLDV			
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(116)	WFIR	INCOMESO!	PARCLSPRAT HL DLSDCV	VLVTWAHG	FELTCL	RYFVE
(1.16) (6241) (6280)	VFIK VRPR	IVQMLAD	HL DLSDCV	VLVTWAHG	FELTCL!	RYFVI on 162 631
(116) ( <b>6241)</b> ( <b>6280</b> ) ( <b>6100</b> )	VFIK VRPR 6280 VCRE	IVOMLSOS SIVQMLAD 52	HL DLSDCV 90 KAR AYNSR	VLVTWAHG 6300 TGY/GCVB	FELTCLI Secti	RYFVI on 162 631 YL 144
(116) (6241) (6280) (6100) (5668)	VFIR VRPR 6280 VCRL	IVOMLSC SOUTH	HL DLSDCV 190 KARTAYNSE 3 LA TTENSE	VLVTWAHG 6300 TGY/GCWR TQA/ACUK	FELTCL! ——Secti	RYFVI on 162 631 YLVIII
(116) (6241) (6280) (6100) (5668) (6184)	VFIR VRPR 6280 VCRE VERE	OVESUS OF THE PROPERTY OF THE	HL DLSDCV 190 KARLAYNSK SCATTENSK KRITCENSK	VLVTWAHG 6300 TGY/GCWB TQA/AC/K	FELTCLI Secti HSVTC	RYFVI on 162 631 YI, WH FVZH
(116) (6241) (6280) (6100) (5668) (6184)	VEIR  6280  VERE  VERE	OVESUS OF THE PROPERTY OF THE	HL DLSDCV 90 KAR AYNSR	VLVTWAHG 6300 TGY/GCWB TQA/AC/K	FELTCLI Secti HSVTC	RYFVE on 162 631 YLVEH YLVEH

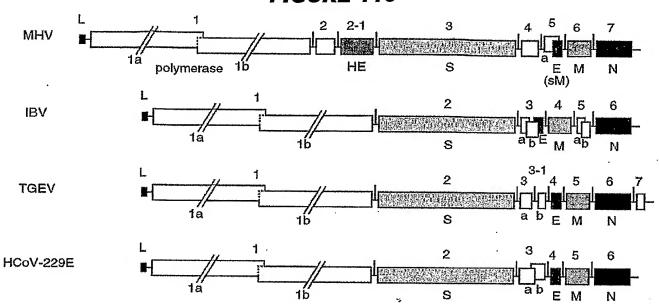
# FIGURE 115 (contd.)

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(194)	TMIDA	TOWAL.	YG-PFRV	TMTH	LARYME	NUMER	ASCDA	
(6319)	LIVD	COOMEY	SGSLSSN	HOLH	SVHKG	AHVA	SSDAIMTI	Ř.
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(6358)	6358.		6370		6380		639	6
(6178)	ČLAV:	YDEFCN	NINWNVE	YPII	SMEGSI	nrsc	BVLQEVM	Ē
							RYGQR <b>M</b> YI	
							RLLORVM	
(229)				·				_
	CLAVI	HDCFCN	VNWNLE	YPII	SNELSV	NTSC	RLLQRVM	L
							Section 165	
(6397)			6410		6420		643	
(6217)	KAAM	LCNRYT	LCYDIGN	IPKAT	ACVKD-	-EDF	KFYDAQP	I
(5784)	NACV	DALKVN	VVYDIGN	IPKGI	KCVRRG	DVNE	RFYDKNP	Ϊ
(6301)	RAAM	LCNRYD	VCYDIGN	IPKGL	ACVKG-	-YDF	KEYDASP	V
(229)	THOMAS AND AND ASSAULT							
(6397)	KAAM	LCNRY	VCYDIGN	IPKGI	ACVK	FDF	KFYDANP	I
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(6436)	6436		6450	)	,6460		647	4
(6254)	VKSV	KTLLYS	PEAHKDS	SFKDG	LCMFWN	CNVD	KYPPNAV	V
(5823)	VRNV	KQFEYD	YNQHKDI	<b>(FADG</b>	LCMFWN	CNVD	CYPDNSL	V.
(6338)							KYPANAV	
(229)								_
(6436)	VKSV	KQFLY	YEAHKD	F DG	LCMFWN	CNVD	KYP NAV	V
L.							- Section 167	7
(6475)	6475	6480		90	65	. J	651	2.95.444.2
(6293)	CRED	PRVIM	LNLPGCI	<b>ឬចំពេ</b> នជ	YVNKHA	THTE	PESRAAE	E,
(5862)	CRYD	TRNISV	FNLPGCI	NGG8L	YVNKH	FYTE	KIDRISE	E
(6377)	CRPD	TRVINK	ind esci	NGGSL	YVNKHI	LEHTS	PETRAAF	E
(229)	11							
		TRVLN	LNLPGC	NGGSL	YVNKHA	AFHT	PFSRAAF	'E
					,		Section 168	8
(6514)	6514	6520	f	3530	É	540	655	52
(6332)	HERP	MPEEYS	SDIPCV	YMDGW	DAKQVI	YVPI	KSATCII	F
(5901)	MIKA	MEFETS	OSS FCE	TI VI	G-VAQ1	LVSI	ATROCTE	K.
(6416)	NLEP	MPFEYS	SDIECV	YMEGM	ESKOVI	rybi	RSATCIT	'R
(229)	**				·			-
(6514)	) NLKE	MPFFY	CSDTPCV	YMDGM	IDAKQVI	DYVP	LKSATCIT	!R
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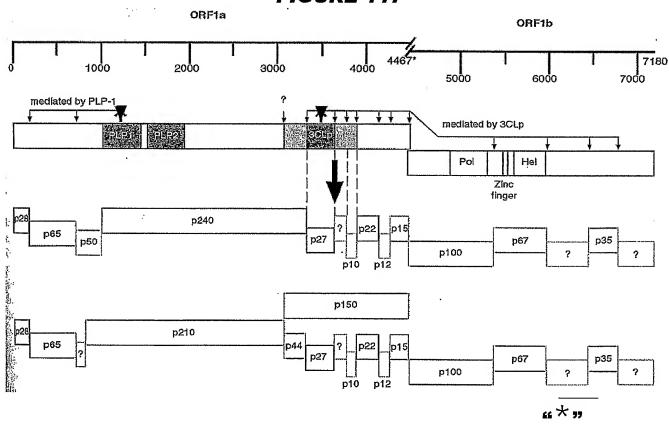
# FIGURE 115 (contd.)

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1999   CNIGGAVCKHARMYAEFVTSYNAAUTAGFTEWUTHILM	(6553)	6553	6560	.6570	6580	6591	
(3939) CNIGGAVCKHARMYAEFVTSYNAATTAGFTFWVTHELM (425) CNIGGAVCIKHAEEYREYLESYNTATTAGFTFWVYKTFD (55653) CNIGGAVCIKHAEEYREYLESYNTATTAGFTFWVYKTFD Section 170  66592) 6592 6600 6630 66410) EYNLWNTFTKLCS LENVVYNLVKTGHYTG AGEMPGATT (5978) PYNLWKSFSALCSTDNIAYNMYKGGHYDAIAGEMPTVLT (6494) EYNLWNTFTKLCS LENVVYNLVNAGHFDGRAGEHFGAVI (229)	(6371)	CNIGGA	VCLKHALE	YREYLESYMP	TTAGFT	FWYYRTED	
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5978   PYNLWKSFSALCSIDNIAYNMYKGGHYDAIAGEMPTVIT   6494   EYNLWNTFTRLOSLENVUYNLUNAGHFDGRAGEBPCAU   (229)			,6600		,6620	6630	•
6449  FYNLWNTFTRLOSLENVUYNLVNAGHFDGRAGELFCAVT	(6410)	FYNLWN	TETKLOSL	ENVVYNLVKTC	HYTGQA	JEMPCAII	
(229) 6592) FYNLWNTFTKLQSLENVVYNLVKAGHYDG AGEMPCAII Section 171 6631) 6631	(5978)	PYNLWK	SESALOSI	DNIAYNMYKGG	HYDAIA	SEMPTVIT	:
Section 171	(6494)	FYNEWN	TETRLOSL	ENVVYNLVNAC	HEDGRA	GELPCAVI	
Section 171   6631   6640   6850   6669   6669   66449   1 DKVVAKIEKEBVVIFINITEYPTNVAVELFAKESTRIH   6017)   CDKVFVIDGGVEK, VFVNQTTLETSVAFELYAKRITETE   6533   CEKVIAKIONEDVVVEKNNTFFPINVAVELFAKRSTEPE   (229)							•
6631) 6631 6640 6650 6669 6449) LDRVVAKITKEDVVIFINNTTYPTNVÄVILLAKRSTRHH 6017) CDKVFVIDOGVEKA VEVNOTTLETSVAFELYAKRSTRHH 6017) CDKVFVIDOGVEKA VEVNOTTLETSVAFELYAKRSTRHH 66533) EEKVIÄKIQNEDVVVEKNNTTFEUNVAVELFAKRSTRHH (229)	(6592)	FYNLWN	TFTKLOSL	ENVVYNLVKAG	HYDG A	GEMPCAII	
6649   6649   6649   6649   6649   6649   6649   6649   6649   6647   6650   6649   6647   6650   6649   6650	<del></del>	<del></del>	Sto	0		Section 171	
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6533) SEKVIAKIONEDVVVEKNNTIFPTNVAVELFAKRSTRPH (229)							
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C229	(6533)	<b>GERVEA</b>	KIONEDVV	VEKNNTLEEDN	VAVEDE	NKRŠTRPĖ	
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6670) 6670 6680 6690 6708 6488) PELKLERNLWIDWCWKHVIWDYARESTECSWEYGVCMYE 6056) PUNKTLKGLGVDVTNGFVIWDYARGSTECSWEYGVCMYE 6572) PELKLERNLWIDVCWSHVLWDYAKDSVEGSSTYKVCKYE (229)	(6631)	GDKVIA	KIQ EDVV	<b>VFINNTTFPT</b> N	<b>VAVELF</b>	AKRSIR H	
6488) PELKLERNINIDVCWKHVIWDYARESTFCSNEYGVCMYT 6056) PNNRTLKGLGVDVTNGFVTWDYANCTPT YRNTVKVCAYE 6572) PELKLERNINIDVCWSHVLWBYAKDSVEGSSTYKVCKYT (229) 6670) PELKLFRNINIDVCW HVIWDYAKDSIFCSNTYKVC YT Section 173 6709) 6709 6720 6730 6747 6527) DLKFIDKLNVLFDGRDNGALEAFKRSNNGVYISTTKVKS 6095) DTEPNG-LVVLYDDBYGDYCSFLAADNAVLVSTQCYKR 6611) DLQCLESINVLFDGRDNGALEAFKEGRWYINTTKIKS (229)					74. T. A. L.	Section 172	
6056) PHNRILKGLGVDVTNGFVIWBYAICTFI YRNTVKVCAYT  6572) PELKLFRILNIDVCWSHVLWBYAKDSVEGSSTYKVCKYT  (229)			and the second s				
6572) PELECERNLNIDVCWSHVLWDYAKDSVECSSTYKVCKYT (229)	(6488)	PELKIF	RNLWLDWG	NKHVIWOYAKE	STRUSM	PYGVCMYT	
(229)							
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6095) BIEPNGLVVLYDDBYGDYDSFLAADNAVLNSTQCYKR 6611) DLQCIESLNWLFDGRDNGALEAFKKTRNGVYINTTKIKS (229)	•	***************************************	The state of the s	The state of the s		AMERICAN AND E 1887 TO THE PROPERTY OF THE PRO	
6611) DLQCLESLNWLFDGRDNGALEAFKKTRNGVYINTTKIKS (229)							
(229)							
6709) DL ID LNVLFDGRDNGALEAFKKA NGVYISTTKIKS Section 174  6748) 6748 6760 6770 6786  6566) LSMIKGPPRAEINGVVVDKVEDTDCVFYFAVRKEGQDVI SEQIDNO: 10 6132) YSYVSIPSHLLVQNGMPLKDGANLYV SEQIDNO: 10 6650) LSMIKEPORADLNGVVVEKVEDSDVEFWFAVRKDGDDVI SEQIDNO: 10 (229)SEQIDNO: 90	(6611)	DIQCIE	SLUWLIDG	RDNGALEAFKK	CRNGVY:	HTTKIKS	
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6566) LSMIKGPPRÆLNGVVVDKVEDTDCVFYFAVRKEGODVI SEQIDNO: 10 6132) YSYVSIPSHLLVQHGMPLKDGANLYV SEQIDNO: 10 6650) LSMIKGPORADINGVVVEKVEDSDVEFWFAVRKDGHDVI SEQIDNO: 10 (229)SEQIDNO: 90	***************************************	Michigan Company	an an an an an an an an an an an an an a	were desired to the second second second second second second second second second second second second second		Section 174	
6566) LSMIKGPPRÆLNGVVVDKVEDTDCVFYFAVRKEGODVI SEQIDNO: 10 6132) YSYVSIPSHLLVQHGMPLKDGANLYV SEQIDNO: 10 6650) LSMIKGPORADINGVVVEKVEDSDVEFWFAVRKDGHDVI SEQIDNO: 10 (229)SEQIDNO: 90	(6748)	6748					
6132) YSYVSIPSHLLVONGMPLKDGANLYW SEQIDNO: 10 6650) LSMIKEPORADLNGVVVEKVEDSDVEFWFAVRKDEDDVI SEQIDNO: 10 (229)SEQIDNO: 90	(6566)	ismiks	PPRAELING	VVVDKVGDT DC	VFYFAVI	REGODVI	SEQ ID NO: 10
6650) LSMIKCPOPADINEVVVEKVEDSDVEFWFAVRKDEDDVI SEQIDNO: 10 (229) SEQIDNO: 90	(6132)	YSYVEI	PSHLLVON	GMPLKDG	ACTUAL NATION AND ADMINISTRATION OF	ANLYV	SEQ ID NO: 10
(229) SEQ ID NO: 90	(6650)	LSMIKG	PORADING	WVVEKVEDSDV	BEWEAVE	KDGDOVI	SEQ ID NO: 10
6748) LSMIKGP RADLNGVVVDKVGDSD FWFAVRKDGNDVI SEQIDNO: 10	(229)			or and a manager of the control of t			
		LSMIKG	P RADLNG	VVVDKVGDSD	FWFAV	RKDGNDVI	SEQ ID NO: 10

## FIGURE 116



# FIGURE 117



# FIGURE 118

		~	4-14-14-14-1			Section 1
(1)	1_		20	30	40	51
(1)	一场生活	EXMILKE	BSGVHALY	TTKELAAT	THIDE LAULUE	IVEAGNEET
(1)	CSTN	LEFDISKS	YSCY: LUMP P	STLAVIDEK!	SATEDLAYELS	IGD-REBEL
(1)					VGGDLAVCL	
(1)					HVGGDI VCLI	
					KVGGDLAVCL	
						Section 2
(52)	52	.60	.70	.80	.90	102
(51)	RRLI				VRAWEGEDVEC	
(51)	RRLI	SMMGEKMN	YONNEYFNME	ITREEATRH	VPAWIGFDVE	CHATRDAVG
(51)					VRAWIGPDVEC	
					VRÄWIGEDVEC	
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					VIII	Section 3
(103)	103	,110	,120	130	140	153
(102)	THE P	TOTATETE		WEETEN NACKE	PEWNA OTSTST	
(102)	TNT P	тотюненс	evin i viz vezne a	VDTENNTKE	TRVNAŠTSTSI	OF KHIME BILM
(102)	n a r	n ar decer	VNIVEVERCY	V BITENNITE F	TRVNAČTSTSI	vo escerva
(102)					TRVNAÕTSTSI	
(103)	THE RESERVE THE PARTY OF THE PA	A S. P. L. C. C. C. C. C. C. C. C. C. C. C. C. C.	as transfer and an old the man transfer as a little of the relation of the territories and the second of the secon	Control of the state of the sta	TRVNAQTSTSI	the state of the speciment of the second sec
(100)		22101010				Section 4
(154)	154	160	,170	180	.190	204
(153)					LWAHGFELIS	
(153)					LWAHGEELTSI	
(153)					EWARGPELIST	
(153)	XXCT	. DWN WEEK	TWOMES NOT THE	GRSDEVVEV	LWAHGFELTŠI	AKKEVKTOPE
(154)					LWAHGFELTSI	
(101)	A STATE OF THE STA	The second second second				Section 5
(205)	205	210	220	230	240	255
(204)					VYNERMEDVO	
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(204)	TOWNSTER	1 11 12 C R. 7 104 545	the state of the s	The state of the s	VYNPFMEDVO(	Shirt in the same of the same
(204)				MNESWEBBY	VYNPEMIDVO	Maryesi s
(205)		·ICDKBDTC	16 Y T Q P P P P P P P	WNHSVCFDY	VYNPFMIDVQ	OWGLYGSLSS
(200)	KICC	LCDKKAIC	) FOI DODI INC	MINIDVOLDI	V 1141 1111 111 1 1 2 1	Section 6
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(255)	HUHHUL	it is that		. P. E. S. K. N. J. III. S. T. Frank for the state of the	MULLANVEL	errestantive
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; (255)	) HHUI	THE PARKE!		THE LEWIS DOE	CHSVNWNLEY	PTTCMPTCVN
; (256)	) NHDI	LHCSVHKG	AHVASSDAIMI	RCLAVHDCE	CNSVNWNLEY	ьттэмегр АИ

# FIGURE 118 (contd.)

***************************************			the state of the s		<del></del>	Section 7
(307)		<u> </u>	330	,340		357
(306)	SE FY	EMYLNACME	LALKVEIVVED :	ENPRETRU	RRGDVMTR	FIRWEIN
(306)	TECEVAL	FVMLKAMI	CNRITTENTI	GHTALACT	Kdēdek.	TEAGETW
(306)	THUSEL	F.WMER.AMI	CNRXDVCvbI	GHTWGIATH	KSYDEK	FULLSEVI
(306)	L. C.L.	FVMLE AMI	CNRYTYCYD	GHYEGIACH	KDFDTK	ANPI
			CNRYTVCYDI			FYDANPIV
	Table 1999		·		<del>- 11</del>	Section 8
(358)	358	370	,380	390		408
(357)	RNVKQFE	Y DYN QHKDH	SADOLOMEWN	CNVDCYPDN	SEVCENDE	NUSVENL
(355)	KSVKTLL	YSFEAHKDS	SEKDGLCMEWN	CNVDKYPN	AVVCREDTI	<b>VLNNLNL</b>
(355)	KSVKQFV	YKYEAHKDO	) PLOGECMENN	CNVDKYPAN	AVVCREDTI	RVLNKLNI
(355)	KSWKQFL	YSYEAHKDS	BEKDĞEÇMEMN	CNVDKYPAN	AVVEREDTI	RVIN-INI
(358)	KSVKQFL	YSYEAHKDS	SFKDGLCMFWN	CNVDKYPAN	AVVCRFDT	RVLN LNL
				······································		— Section 9
(409)	409	420	,430	440		459
(408)	TECH S	TUNGHAF	TPRECHISTS	Maliant mee	DSSFORT	RVECV-VI
(406)	PEGMASS	LIVERHAZI	izketseaabe	HAF BUL FEY	SITEST	ndghdako
(406)	Pathag	14 POLIT POR SELECTION AND A SELECTION AND A SELECTION AND A SELECTION AND A SELECTION AND A SELECTION AS A SE	e secenare	Nist Park Pry	<u> śdźbowy</u>	irgmesko
(405)	<b>Bathata</b>	litteat	HYKIPSFAAFE	Name Property	WSDOFF TVY	NDGHDAKO
(409)	PGCNGGS	LYVNKHAFI	ITKPFSRAAFE	NLKPMPFFY	YSDTPCVY	
						Section 10
(460)	460	470	480	490	500	510
			it san tekne			
(457)	VOYEER	SATCLIRU	(Lacevalarie	BREREZLE?	LICE THE PLANE	FYYA'EYKI
(457)	Varvese	SARCLIRO	AND SAME THAT	EE FREYLEY	THE ETAG	PTEWVYKI
(456)	VUYVELB	Sancinaci	Jack Agent	EE / REYLES	TE TAREAS	FERWIXKT
(460)	VDYVPLE	SATCITRC	NLGGAVCLKHA	EEYREYLES	YNTATTAG	
###						Section 11
(511)	:511	524				
(509)	LNPRUCZ	INSFSA.	SEQ ID NO: 10073			
(508)	EDET	NTTIKL	SEQ ID NO: 10074			
A 100 ( )	The Part of the Pa	MTFTRLO	SEQ ID NO: 10075			
		WIFTEL	SEQ ID NO: 10076			
			SEQ ID NO: 10077			
	•					

#### FIGURE 119

#### FIGURE 120

#### FIGURE 120A

PRHTQRT-PTVDSSL-WVSK-ITKSMVTLICLSPAKKLFVTFVRGLALM-RAVMQ LEMLWVLTYLSS-DFLQVLT--LYRLVMLTLKITQNSPELMQNLHQVTSLNILYH SCIKACPGM-CVLR-YKCSVIH-KDCQTESCSSFGRMALSLHQ-STLSRLDLKER VVCVTNVQLAFLLHQILMPAGIILWVLTMSITHL-LMFSSGALRVTFRVTMTNIA RYMEMHMWLVVMLS-LDV-QSMSALLSALIGLLNTLL-EMN-GLILLAEKYNTWL-SLHCLLISFQFFMT-EIQRLSSVCLRLK-NGSSTMLSHVVTKLTK-RNSSILML YITINSLMVFVCFGIVTLIVTQPMQLCVGLTQESCQT-TYQAVMVVVCM-ISMHS TLQLSIKVHLLI-SNCLSFTILIVLVSLMANK-CRILIMFHSNLLRVLHDAI-VV LFADTMQMSTDSTWMHII--FLLDLAYGFTNNLILITCGIHLPGYRV

#### FIGURE 120B

LGIPKGHDLP-THLYDGFQNELPSQWLP-YVYHPRRSYSSRSCVDWL-CRGLSCN-RCCGY-PTSPARIFYRC-LSSCTDWLC-H-K-HRIHQS-CKTSTR-PV-TSYTTHV-RLALECSAY-DSTNAQ-YTERIVRQSRVRPLGAWL-AYINEVLCQDWT-KNVLSV-QTCNLLFYFIRYLCLLESFCGF-LCL-PIYD-CSAVGLYG-PSE-P-PTLPGTWKCTCG-L-CYHD-MFSSP-VLC-AR-LVC-IPYYRR-TEG-FCLQKSTTHGCEVCIAC-VSSSS-HRKSKGYQVCASG-SRMEVLRCSAM-QSLQNRGTLLFLCYTSR-IH-WCLFVLEL-R-SLPSQCNCV-V-HKSLVKLELTRL-WW-FVCE-ACIPHSSFR-KCIY-FKAIAFLLLF-SL-VSWQTSSVGY-LCSTQICYVYYTMQFRWCCLQTPCK-VPTVLGCI-YDDFCWI-PMDLQTI-YL-PVEYIYQVTEF

#### FIGURE 120C

-AYPKDMTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVG TNLPLQLGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVV RIKIVQMLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSD TYACWNHSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAV HECFVKRVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVP QAEVEWKFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFD TRVLSNLNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSD IDYVPLKSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNT FTRLQSL

#### FIGURE 120D

-TL-PGKCIPQVISIKLFVNP-AKSSRNHHIICIQVLSVLICMVSANSTT-IASCNTRSR FEWNIINIRHYLFAMRLTRTIRIVKERQLL-ISKCTFIESWSVECMLIHIQTTTITAW-V QV-QDSCVKPTHNCIGWVTINVTIPKQTNTISEFIVMYSIRIEEFLYFVSFVTTWLSIVE LPFYFSLRHTLDSLWISYVMKNWKLISKQCRLHNHVLYFSASRINPQFISYNRVFNRPIN ALNKALMDC-TSSHDSITTSHMCISMYLAMLVMVTLKVTRKAPLLNINHKWVIDIVKTHR MIPAGISI-SRKASCTFVTQTTRSFRSNLDKVLH-CKLKAMRPKDEHDSV-QSFQCITE HLYYLNTHYIPGQAFIHEWYKMFKLVTWWRFCINSGEFCVIFSVNITSRYSY-VNTCRKS-LER-VSTHSISSCMTALYIKANPRTNVTNSFFAGDKHIRVTIDLVIHFETHHRDESTVG HVLWVCL

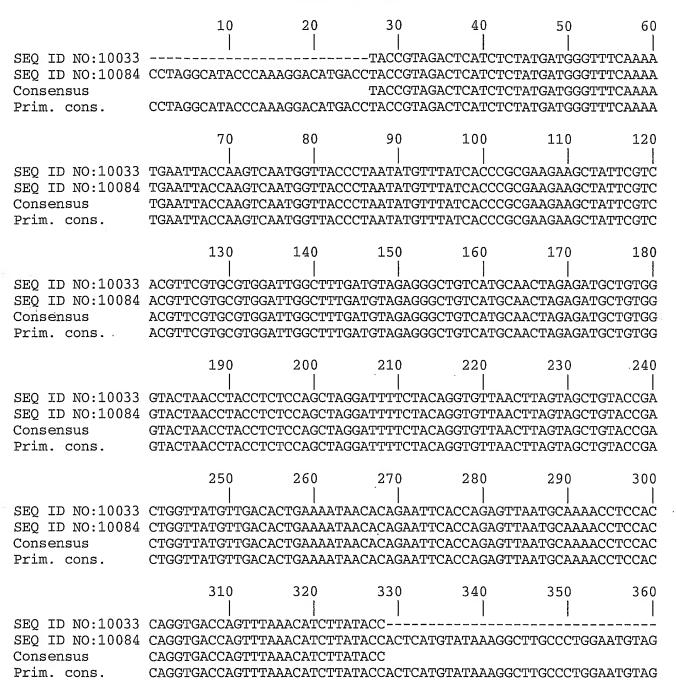
#### FIGURE 120E

KLCNLVNVFHRL-VSNCL-IHRLNPAEIIILYASKYCRYSFAWCLQTAPPKLHRVIHVAD LSGT-SISDTTCLP-DSQGLSE--KKGNCFKLVNALLSKAGVWNACLFTYKLPPSQPGKF KFDKTLVSNLHTIALAG-RSTLQFQNKQTPSVNLS-CIA-E-KSSSIL-ALSLHG-AS-N FHSTSA-GTHLIAFGFPMS-RTGNLSASNADFTTMCCTFLQAELTLSSSPIIGYSTDQST RLTKHSWTAKHLVMIASQLATCAFPCTWQCWSWLL-RLPVKPHC-TSIINGL-T-SKPTE-FQQA-VSDEVEKQVARLSHRQHVLSGPILTKYFIDVSSKPCAQRTNTTLSDNPFSVSLSICTILIRTTFQGKPLYMSGIRCLNWSPGGGFALTLVNSVLFSVST-PVGTATKLTPVENPSWRGRLVPTASLVA-QPSTSKPIHART-RIASSRVINILG-PLTW-FILKPIIEMSLR-VMSFGYA-

#### FIGURE 120F

NSVTW-MYSTGYKYQIVCKSIG-IQQKSSYYMHPSTVGTHLHGVCKQHHLNCIV-YT-QI
-VEHNQYPTLLVCHETHKDYQNSKRKAIALN--MHFYRKLECGMHAYSHTNYHHHSLVSS
SLTRLLCQTYTQLHWLGNDQRYNSKTNKHHQ-IYRDV-HKNRRVPLFCKLCHYMAEHRRT
SILLQPEAHT--PLDFLCHEELETYQQAMQTSQPCVVLFCKQN-PSVHLL--GIQQTNQR
A-QSTHGLLNI-S--HHN-PHVHFHVPGNVGHGYSEGYP-SPTAEHQS-MGYRHSQNPQN
DSSRHKYLMK-KSKLHVCHTDNTFFQVQS-QSTSLM-AQSHAPKGRTRLCLTILSVYH-A
FVLS-YALHSRASLYT-VV-DV-TGHLVEVLH-LW-ILCYFQCQHNQSVQLLS-HL-KIL
AGEVG-YPQHL-LHDSPLHQSQSTHERDE-LLRG--TY-GNH-LGNSF-NPS-R-VYGRS
CPLGMPR

#### FIGURE 121



etc.

FIGURE 122

#### 5'3' Frame 1

cctaggcatacccaaaggacatgacctaccgtagactcatctctatgatgggtttcaaaa PRHTQRT-PTVDSSL-WVSK tgaattaccaagtcaatggttaccctaatatgtttatcacccgcgaaqaagctattcqtc - I T K S M V T L I C L S P A K K L F V acgttcgtgcgtggattggctttgatgtagagggctgtcatgcaactagagatgctgtgg T F V R G L A L M - R A V M O L E M L W gtactaacctacctctccagctaggattttctacaggtgttaaccttagtagctgtaccga ctggttatgttgacactgaaaataacacagaattcaccagagttaatgcaaaacctccac LVMLTLKITQNSPELMQNLH caggtgaccagtttaaacatcttataccactcatgtataaaggcttgccctggaatgtag Q V T S L N I L Y H S C I K A C P G M -C V L R - Y K C S V I H - K D C O T E tgttcgtcctttgggcgcatggctttgagcttacatcaatgaagtactttgtcaagattg C S S F G R M A L S L H Q - S T L S R L gacctgaaagaacgtgttgtctgtgtgacaaacgtgcaacttqcttttctacttcatcaq D L K E R V V C V T N V Q L A F L L H atacttatgcctgctggaatcattctgtgggttttgactatgtctataacccatttatga ILMPAGIILWVLTMSITHL ttgatgttcagcagtggggctttacgggtaaccttcagagtaaccatgaccaacattgcc LMFSSGALRVTFRVTMTNIA aggtacatggaaatgcacatgtggctagttgtgatgctatcatgactagatgtttagcag R Y M E M H M W L V V M L S - L D V - O tccatgagtgctttgttaagcgcgttgattggtctgttgaataccctattataggagatg S M S A L L S A L I G L L N T L L - E M aactgagggttaattctgcttgcagaaaagtacaacacatggttgtgaagtctgcattgc N - G L I L A E K Y N T W L - S L H C ttgctgataagtttccagttcttcatgacataggaaatccaaaggctatcaagtgtgtgc LLISFQFFMT-EIQRLSSVC ctcaggctgaagtagaatggaagttctacgatgctcagccatgtagtgacaaagcttaca LRLK-NGSSTMLSHVVTKLT aaatagaggaactcttctattcttatqctatacatcacgataaattcactgatggtgttt K - R N S S I L M L Y I T I N S L M V F gtttgttttggaattgtaacgttgatcgttacccagccaatgcaattgtgtaggtttg V C F G I V T L I V T Q P M Q L C V G L acacaagagtcttgtcaaacttgaacttaccaggctgtgatggtggtagtttgtatgtga T Q E S C Q T - T Y Q A V M V V C M ataagcatgcattccacactccagctttcgataaaagtgcatttactaatttaaaqcaat ISM H S T L Q L S I K V H L L I - S N tgcctttcttttactattctgatagtccttgtgagtctcatggcaaacaagtagtgtcgg C L S F T I L I V L V S L M A N K - C R atattgattatgttccactcaaatctgctacqtgtattacacqatgcaatttaqqtqqtq I L I M F H S N L L R V L H D A I - V V ctgtttgcagacaccatgcaaatgagtaccgacagtacttqqatqcatataatatqatqa L F A D T M O M S T D S T W M H I I - tttctgctggatttagcctatggatttacaaacaatttgatacttataacctgtggaata LLDLAYGFTNNLILITCGI

catttaccaggttacagagttta H L P G Y R V

#### 5'3' Frame 2

cctaggcatacccaaaggacatgacctaccgtagactcatctctatgatgggtttcaaaat L G I P K G H D L P - T H L Y D G F Q N gaattaccaagtcaatggttaccctaatatgtttatcacccgcgaagaagctattcgtca E L P S Q W L P - Y V Y H P R R S Y S S cgttcgtgcgtggattggctttgatgtagagggctgtcatgcaactagagatgctgtggg R S C V D W L - C R G L S C N - R C C G tactaacctacctctccagctaggattttctacaggtgttaacttagtagctgtaccgac - PTSPARIFYRC - LSSCTD tggttatgttgacactgaaaataacacagaattcaccagagttaatgcaaaacctccacc W L C - H - K - H R I H Q S - C K T S T aggtgaccagtttaaacatcttataccactcatgtataaaaggcttgccctggaatgtagt R - P V - T S Y T T H V - R L A L E C S A Y - D S T N A Q - Y T E R I V R Q gttcgtcctttgggcgcatggctttgagcttacatcaatgaagtactttgtcaagattgg V R P L G A W L - A Y I N E V L C Q D W acctgaaagaacgtgttgtctgtgtgacaaacgtgcaacttgcttttctacttcatcaga T - K N V L S V - Q T C N L L F Y F I tacttatgcctgctggaatcattctgtgggtttttgactatgtctataacccatttatgat Y L C L L E S F C G F - L C L - P I Y D tgatgttcagcagtggggctttacgggtaaccttcagagtaaccatgaccaacattgcca - C S A V G L Y G - P S E - P - P T L P ggtacatggaaatgcacatgtggctagttgtgatgctatcatgactagatgtttagcagt G T W K C T C G - L - C Y H D - M F S S ccatgagtgctttgttaagcgcgttgattggtctgttgaataccctattataggagatga P - V L C - A R - L V C - I P Y Y R R actgagggttaattctgcttgcagaaaagtacaacacatggttgtgaagtctgcattgct TEG-FCLQKSTTHGCEVCIA tgctgataagtttccagttcttcatgacataggaaatccaaaggctatcaagtgtgtgccC - - V S S S S - H R K S K G Y O V C A tcaggctgaagtagaatggaagttctacgatgctcagccatgtagtgacaaagcttacaa SG-SRMEVLRCSAM--OSLO aatagaggaactcttctattcttatgctatacatcacgataaattcactgatgqtqtttg NRGTLLFLCYTSR-IH-WCL tttgttttggaattgtaacgttgatcqttacccagccaatqcaattgtgtgtaqqtttga FVLEL-R-SL-PSQCNCV-Vcacaagagtcttgtcaaacttgaacttaccaggctgtgatggtggtagtttgtatgtgaa H K S L V K L E L T R L - W W - F V C E taagcatgcattccacactccagctttcgataaaagtgcatttactaatttaaagcaatt - A C I P H S S F R - K C I Y - F K A I gcctttcttttactattctgatagtccttgtgagtctcatggcaaacaagtagtgtcgga A F L L L F - - S L - V S W Q T S S V G tattgattatgttccactcaaatctgctacgtgtattacacgatgcaatttaggtggtgc Y - L C S T Q I C Y V Y Y T M Q F R W C tgtttgcagacaccatgcaaatgagtaccgacagtacttggatgcatataatatgatgat

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C L Q T P C K - V P T V L G C I - Y D D ttctgctggatttagcctatggatttacaaacaatttgatacttataacctgtggaatac F C W I - P M D L Q T I - Y L - P V E Y atttaccaggttacagagttta I Y Q V T E F

#### 5'3' Frame 3

cctaggcatacccaaaggacATGacctaccgtagactcatctctatgatgggtttcaaaatg - A Y P K D M T Y R R L I S M M G F K M aattaccaagtcaatggttaccctaatatgtttatcacccgcgaagaagctattcgtcac N Y O V N G Y P N M F I T R E E A I R H gttcgtgcgtggattggctttgatgtagagggctgtcatgcaactagagatgctgtgggt V R A W I G F D V E G C H A T R D A V G actaacctacctctccagctaggattttctacaggtgttaaccttagtagctgtaccgact T N L P L Q L G F S T G V N L V A V P T ggttatgttgacactgaaaataacacagaattcaccagagttaatgcaaaacctccacca G Y V D T E N N T E F T R V N A K P P P ggtgaccagtttaaacatcttataccactcatgtataaaggcttgccctggaatgtagtg G D Q F K H L I P L M Y K G L P W N V V RIKIVQMLS'DTLKGLSDRVV ttcqtcctttqgqcqcatggctttgagcttacatcaatgaagtactttgtcaagattgga F V L W A H G F E L T S M K Y F V K I G cctqaaaqaacqtgttgtctgtgtgacaaacgtgcaacttgcttttctacttcatcagat PERTCCLCDKRATCFSTSSD acttatgcctgctggaatcattctgtgggttttgactatgtctataacccatttatgatt T Y A C W N H S V G F D Y V Y N P F M I gatgttcagcagtggggtttacgggtaaccttcagagtaaccatgaccaacattgccag D V O O W G F T G N L O S N H D O H C Q gtacatggaaatgcacatgtggctagttgtgatgctatcatgactagatgtttagcagtc V H G N A H V A S C D A I M T R C L A V catgagtgctttgttaagcgcgttgattggtctgttgaataccctattataggagatgaa H E C F V K R V D W S V E Y P I I G D E ctgagggttaattctgcttgcagaaaagtacaacacatggttgtgaagtctgcattgctt L R V N S A C R K V Q H M V V K S A L L gctgataagtttccagttcttcatgacataggaaatccaaaggctatcaagtgtgtgcct A D K F P V L H D I G N P K A I K C V P caggetqaaqtaqaatqqaaqttetacqatqctcagecatqtagtqacaaaqettacaaa O A E V E W K F Y D A Q P C S D K A Y atagaggaactcttctattcttatgctatacatcacgataaattcactgatggtgtttgt I E E L F Y S Y A I H H D K F T D G V C ttgttttggaattgtaacgttgatcgttacccagccaatgcaattgtgtgtaggtttgac L F W N C N V D R Y P A N A I V C R F D acaagagtcttgtcaaacttgaacttaccaggctgtgatggtggtagtttgtatgtgaat TRVLSNLNLPGCDGGSLYVN aagcatgcattccacactccagctttcgataaaagtgcatttactaatttaaagcaattg K H A F H T P A F D K S A F T N L K O cctttcttttactattctgatagtccttgtgagtctcatggcaaacaagtagtgtcggat P F F Y Y S D S P C E S H G K Q V V S D

attgattatgttccactcaaatctgctacgtgtattacacgatgcaatttaggtggtgct I D Y V P L K S A T C I T R C N L G G A gtttgcagacaccatgcaaatgagtaccgacagtacttggatgcatataatatgatgatt V C R H H A N E Y R Q Y L D A Y N M M I tctgctggatttagcctatggatttacaaacaatttgatacttataacctgtggaataca S A G F S L W I Y K Q F D T Y N L W N T tttaccaggttacagagtta F T R L Q S L

#### 3'5' Frame 1

TL-PGKCIPQVISIKLFVN ccataggctaaatccagcagaaatcatcatattatatgcatccaagtactgtcggtactc P-AKSSRNHHIICIQVLSVL atttgcatggtgtctgcaaacagcaccacctaaattgcatcgtgtaatacacgtagcaga M V S A N S T T - I A S C N T R S tttgagtggaacataatcaatatccgacactacttgtttgccatgagactcacaaggact F E W N I I N I R H Y L F A M R L T R T atcagaatagtaaaaggcaattgctttaaattagtaaatgcacttttatcgaaagc IVKERQLL - ISKCTFI tggagtgtggaatgcatgcttattcacatacaaactaccaccatcacagcctggtaagtt WSVECMLIHIQTTT I T A W - V caagtttgacaagactcttgtgtcaaacctacacacaattgcattggctgggtaacgatc Q V - Q D S C V K P T H N C I G W V T I aacgttacaattccaaaacaacaacaacatcagtgaatttatcgtgatgtatagcata NVTIPKQTNTISEFIVMY agaatagaagagttcctctattttgtaagctttgtcactacatggctgagcatcgtagaa RIEEFLYFVSFVTTWLSIVE cttccattctacttcagcctgaggcacacacttgatagcctttggatttcctatgtcatg L P F Y F S L R H T L D S L W I S Y V M aagaactggaaacttatcagcaagcaatgcagacttcacaaccatqtqttqtacttttct K N W K L I S K Q C R L H N H V L Y F S gcaagcagaattaaccctcagttcatctcctataatagggtattcaacagaccaatcaac A S R I N P Q F I S Y N R V F N R P I gcgcttaacaaagcactcatggactgctaaacatctagtcatgatagcatcacaactagc A L N K A L M D C - T S S H D S I T T S cacatgtgcatttccatgtacctggcaatgttggtcatggttactctgaaggttacccgt HMCISMYLAMLVMVTLKVT aaagccccactgctgaacatcaatcataaatgggttatagacatagtcaaaacccacaga K A P L L N I N H K W V I D I V K T H atgattccagcaggcataagtatctgatgaagtagaaaagcaagttgcacqtttqtcaca MIPAGISI -- SRKASCTFVT cagacaacacgttctttcaggtccaatcttgacaaagtacttcattgatgtaagctcaaa QTTRSFRSNLDKVLH-CKLK gccatgcgcccaaaggacgaacacgactctgtctgacaatcctttcagtgtatcactgag AMRPKDEHDSV-QSFQCITE catttgtactatcttaatacgcactacattccagggcaagcctttatacatqaqtqqtat H L Y Y L N T H Y I P G Q A F I H E W Y a agatgttta a actggtcacctggtggaggttttgcatta actctggtgaattctgtgtt

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K M F K L V T W W R F C I N S G E F C V attitude the state of the sta

#### 3'5' Frame 2

K L C N L V N V F H R L - V S N C L - I cataggctaaatccagcagaaatcatcatattatatgcatccaagtactgtcggtactca H R L N P A E I I I L Y A S K Y C R Y S tttgcatggtgtctgcaaacagcaccacctaaattqcatcqtqtaatacacqtaqcaqat F A W C L Q T A P P K L H R V I H V A D ttgagtggaacataatcaatatccgacactacttgtttgccatgagactcacaaggacta SGT-SISDTTCLP-DSOGL tcagaatagtaaaaggaaatgctttaaattagtaaatgcacttttatcgaaagct -- K K G N C F K L V N A L L S K A ggagtgtggaatgcatgcttattcacatacaaactaccaccatcacagcctggtaagttc G V W N A C L F T Y K L P P S O P G K F aagtttgacaagactcttgtgtcaaacctacacacaattgcattggctgggtaacgatca K F D K T L V S N L H T I A L A G - R S acgttacaattccaaaacaacaacaccatcagtgaatttatcgtgatgtatagcataa Q F Q N K Q T P S V N L S - C I A gaatagaagagttcctctattttgtaagctttgtcactacatggctgagcatcgtagaac E - K S S S I L - A L S L H G - A S - N ttccattctacttcagcctgaggcacacacttgatagcctttggatttcctatgtcatga FHSTSA-GTHLIAFGFPMSagaactggaaacttatcagcaagcaatgcagacttcacaaccatgtgttgtacttttctg G N L S A S N A D F T T M C C T F caagcagaattaaccctcagttcatctcctataatagggtattcaacagaccaatcaacg Q A E L T L S S S P I I G Y S T D Q S T cgcttaacaaagcactcatggactgctaaacatctagtcatgatagcatcacaactagcc T K H S W T A K H L V M I A S Q L A acatgtgcatttccatgtacctggcaatgttggtcatggttactctgaaggttacccqta TCAFPCTWQCWSWLL-RLPV aagccccactgctgaacatcaatcataaatgggttatagacatagtcaaaacccacagaa KPHC-TSIINGL-T-SKP tgattccagcaggcataagtatctgatgaagtagaaaagcaagttgcacgtttqtcacac Q Q A - V S D E V E K Q V A R L S H agacaacacgttctttcaggtccaatcttgacaaagtacttcattgatgtaagctcaaag RQHVLSGPILTKYFIDVSS ccatgcgcccaaaggacgaacacgactctgtctgacaatcctttcagtgtatcactgagc P C A Q R T N T T L S D N P F S V S L S

atttgtactatcttaatacgcactacattccagggcaagcctttatacatgagtggtata I C T I L I R T T F Q G K P L Y M S G I agatgtttaaactggtcacctggtggaggttttgcattaactctggtgaattctgtta R C L N W S P G G G F A L T L V N S V L ttttcagtgtcaacataaccagtcggtacagctactaagttaacacctgtagaaaatcct F S V S T - P V G T A T K L T P V E N P agctggagaggtaggttagtacccacagcatctctagttgcatgacagccctctacatca S W R G R L V P T A S L V A - Q P S T S aagccaatccacgcacgaacgtgacgaatagcttcttcgcgggtgataaacatattaggg K P I H A R T - R I A S S R V I N I L G taaccattgacttggtaattcattttgaaacccatcatagagatgagtctacggtaggtc - P L T W - F I L K P I I E M S L R - V atgtcctttgggtatgcctagg M S F G Y A -

#### 3'5' Frame 3

S V T W - M Y S T G Y K Y Q I V C K S ataggctaaatccagcagaaatcatcatattatatgcatccaagtactgtcggtactcat IG-IQQKSSYYMHPSTVGTH ttgcatggtgtctgcaaacagcaccacctaaattgcatcgtgtaatacacgtagcagatt L H G V C K Q H H L N C I V - Y tgagtggaacataatcaatatccgacactacttgtttgccatgagactcacaaggactat - V E H N Q Y P T L L V C H E T H K D Y cagaatagtaaaaggaaaggcaattgctttaaattagtaaatgcacttttatcgaaagctg Q·N S·K R K A I A L N - - M H F Y R K L gagtgtggaatgcatgcttattcacatacaaactaccaccatcacagcctggtaagttca E C G M H A Y S H T N Y H H H S L V S S agtttgacaagactcttgtgtcaaacctacacacaattgcattggctgggtaacgatcaa S L T R L L C Q T Y T O L H W L G N D O cgttacaattccaaaacaacaacaccatcagtgaatttatcgtgatgtatagcataag RYNSKTNKHHQ-IYRDV-HK aatagaagagttcctctattttgtaagctttgtcactacatggctgagcatcgtagaact N R R V P L F C K L C H Y M A E H R R T tccattctacttcagcctgaggcacacacttgatagcctttggatttcctatgtcatgaa SILLQPEAHT--PLDFLCHE gaactggaaacttatcagcaagcaatgcagacttcacaaccatgtgttgtacttttctgc T Y O O A M O T S O P C V V L F C aagcagaattaaccctcagttcatctcctataatagggtattcaacagaccaatcaacgc KQN-PSVHLL--GIQQTNQR gcttaacaaagcactcatggactgctaaacatctagtcatgatagcatcacaactagcca STHGLLNI-S--HHN A - 0 catgtgcatttccatgtacctggcaatgttggtcatggttactctgaaggttacccgtaa HVHFHVPGNVGHGYSEGYPagccccactgctgaacatcaatcataaatgggttatagacatagtcaaaacccacagaat S P T A E H Q S - M G Y R H S Q N P Q N gattccagcaggcataagtatctgatgaagtagaaaagcaagttgcacgtttgtcacaca S S R H K Y L M K - K S K L H V C H T gacaacacgttctttcaggtccaatcttgacaaagtacttcattgatgtaagctcaaagc

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DNTFFQVQS-QSTSLM-AQS catgcgcccaaaggacgaacacgactctgtctgacaatcctttcagtgtatcactgagca HAPKGRTRLCLTILSVYH-A tttgtactatcttaatacgcactacattccagggcaagcctttatacatgagtggtataa FVLS-YALHSRASLYT-VVgatgtttaaactggtcacctggtggaggttttgcattaactctggtgaattctgtgttat DV-TGHLVEVLH-LW-ILCY tttcagtgtcaacataaccagtcggtacagctactaagttaacacctgtagaaaatccta F Q C Q H N Q S V Q L L S - H L - K I L gctggagaggtaggttagtacccacagcatctctagttgcatgacagccctctacatcaa AGEVG-YPQHL-LHDSPLHQ agccaatccacgcacgaacgtgacgaatagcttcttcgcgggtgataaacatattagggt S Q S T H E R D E - L L R G - - T Y - G aaccattgacttggtaattcattttgaaacccatcatagagatgagtctacqgtaqqtca NH-LGNSF-NPS-R-VYGRS tgtcctttgggtatgcctagg C P L G M P R

# FIGURE 123

${\tt CCTAGGCATACCCAAAGGACATGACCTACCGTAGACTCATCTCTATGATGGGTTTCAAAATGAATTACCAAGTCAATGGT$
ii
${\tt TACCCTAATATGTTTATCACCCGCGAAGAAGCTATTCGTCACGTTCGTGCGTG$
i
i N N TGCAACTAGAGATGCTGTGGGTACTAACCTACCTCCCAGCTAGGATTTTCTACAGGTGTTAACTTAGTAGCTGTACCGA
NN
$\mathtt{CTGGTTATGTTGACACTGAAAATAACACAGAATTCACCAGAGTTAATGCAAAACCTCCACCAGGTGACCAGTTTAAACAT}$
N
CTTATACCACTCATGTATAAAGGCTTGCCCTGGAATGTAGTGCGTATTAAGATAGTACAAATGCTCAGTGATACACTGAA
NN
${f AGGATTGTCAGACAGAGTCGTGTTCGTCCTTTGGGCGCATGGCTTTGAGCTTACATCAATGAAGTACTTTGTCAAGATTG}$
GACCTGAAAGAACGTGTTGTCTGTGTGACAAACGTGCAACTTGCTTTTCTACTTCATCAGATACTTATGCCTGCTGGAAT
NNNNNN
TAACCATGACCAACATTGCCAGGTACATGGAAATGCACATGTGGCTAGTTGTGATGCTATCATGACTAGATGTTTAGCAG
NiN
${\tt TCCATGAGTGCTTTGTTAAGCGCGTTGATTGGTCTGTTGAATACCCTATTATAGGAGATGAACTGAGGGTTAATTCTGCT}$
N
TGCAGAAAAGTACAACACATGGTTGTGAAGTCTGCATTGCTTGC
i
AAAGGCTATCAAGTGTGTGCCTCAGGCTGAAGTAGAATGGAAGTTCTACGATGCTCAGCCATGTAGTGACAAAGCTTACA
NNNNN
AAATAGAGGAACTCTTCTATTCTTATGCTATACATCACGATAAATTCACTGATGGTGTTTGTT
NN.
GTTGATCGTTACCCAGCCAATGCAATTGTGTGTGTAGGTTTGACACAAGAGTCTTGTCAAACTTGAACTTACCAGGCTGTGA
ииии.
TGGTGGTAGTTTGTATGTGAATAAGCATGCATTCCACACTCCAGCTTTCGATAAAAGTGCATTTACTAATTTAAAGCAAT
NN
TGCCTTTCTTTTACTATTCTGATAGTCCTTGTGAGTCTCATGGCAAACAAGTAGTGTCGGATATTGATTATGTTCCACTC
iiii
AAATCTGCTACGTGTATTACACGATGCAATTTAGGTGGTGCTGTTTGCAGACACCATGCAAATGAGTACCGACAGTACTT
NNNN
GGATGCATATAATATGATGATTTCTGCTGGATTTAGCCTATGGATTTACAAACAA
N
CATTTACCAGGTTACAGAGTTTA SEQ ID NO: 10084

# FIGURE 123 (contd.)

FIGURI	E 123 (con	ta.)		
		Pos	Score	Pred
		24467946748351997074673942048957115200570046234701580605027635199707467394204895711520057004623470	1470062001938654979077870414116040486351270323866 5589779192177800844922018558510319760983679511795 22123124224429218558510319760983679511795 212321145312703219760983679511795	Yes - Yes - Yes - Yes - Yes - Yes

0 4

# FIGURE 124

Sequences:		(bits)	Value
gi   14917044 gi   26007546 gi   2769342   gi   6625761   gi   2641128   gi   4377413   gi   133592   gi   26008080 gi   15077820 gi   18033972 gi   7769353   gi   17529672 gi   25121571 gi   26008092 gi   10242469 gi   14149033 gi   458735   gi   133594   gi   29293454 gi   29293454 gi   29293454 gi   25121555 gi   9635157   gi   19387582 gi   12175747 gi   133591   gi   133591   gi   133591   gi   133591   gi   133591	VFIHJH genome polyprotein 1b - murine hepatit   Sp  P29982 RRPB_CVMJH RNA-directed RNA polymeras   sp  P29982 RRPB_CVMJH RNA-directed RNA polymeras   gb  AAF69332.1   AF208066_2 RNA-directed RNA polyme   gb  AAF19384.1   AF201929_2 RNA-directed RNA polyme   gb  AAF19384.1   AF201929_2 RNA-directed RNA polyme   gb  AAB86818.1   RNA-directed RNA polymerase [muri   emb  CAA36202.1   open reading frame 1b (AA 1-2733   pp  P16342   RRPB_CVMA5 RNA-DIRECTED RNA POLYMERASE   ref   NP_150073.2   orf1ab polyprotein [Bovine cor   gb  AAK83365.1   replicase [bovine coronavirus]   gb  AAL57305.1   replicase [bovine coronavirus]   gb  AAL69342.1   AF208067_2 RNA-directed RNA polyme   gb  AAL40397.1   AF220295_2 RNA polymerase 1b [bov   ref   NP_740618.1   coronavirus nsp11 [Murine hepa   ref   NP_742140.1   coronavirus nsp11 [Bovine coro   ref   NP_066134.1   ORF1ab polyprotein; frameshift   emb  CAA39112.1   replicase polyprotein lab [Avia   mb  CAA83018.1   potential chimeric protein [Avian   pp  P26314   RRPB_IBVB RNA-DIRECTED RNA POLYMERASE (   gb  AAO67706.1   ORF1b polyprotein [Avian infect   ref   NP_740631.1   coronavirus nsp11 [Avian infect   ref   NP_7598309.1   Po11 [porcine epidemic diarrhe   ref   NP_073549.1   replicase polyprotein lab [Hum   pp  P18458   RRPB_BEV RNA-directed RNA polymerase (O   dbj   BAA13323.1   cyanoprotein alpha subunit precu	638 637 637 637 635 634 633 633 633 633 622 617 575 570 575 570 575 541 535 535	0.0 0.0 0.0 0.0 0.0 0.0 0.0 e-180 e-180 e-180 e-177 e-175 e-163 e-163 e-161 e-160 e-158 e-153 e-153 e-153 e-153 e-153
>gi 74827 r (strain JHM I		virus	
	38 bits (1645), Expect = 0.0 = 287/481 (59%), Positives = 366/481 (76%), Gaps = 5/	′481 (1 <sup>9</sup>	≩)
Query: 6	MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAY		
Sbjct: 1585	+TY RLIS+MGFK++ ++GY +FITR+EAI+ VRAW+GFD EG HATRD++ VTYSRLISLMGFKLDLTLDGYCKLFITRDEAIKRVRAWVGFDAEGAHATRDSI		
Query: 66	LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWN		_
Sbjct: 1645	LGFSTG++ V TG + F + A+ PPG+QFKHL+PLM +G W+V LGFSTGIDFVVEATGMFAERDGYVFKKAAARAPPGEQFKHLVPLMSRGQKWDV		
Query: 126	MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSS MLSD L L+D VV V WA FELT ++YF K+G E C +C+KRATCF++ +		N 185
Sbjct: 1705	MLSDHLVDLADSVVLVTWAASFELTCLRYFAKVGKEVVCSVCNKRATCFNSRT		R 1764
Query: 186	HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAHS DY+YNP ++D+QQWG+TG+L SNHD C VH AHVAS DAIMTRCLA		
Sbjct: 1765	HSYSCDYLYNPLIVDIQQWGYTGSLTSNHDPICSVHKGAHVASSDAIMTRCLA		

Query:	246	RVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEW V+W++EYPII +E+ VN++CR +Q ++ ++A+L +++ V +DIGNPK + CV ++	305
Sbjct:	1825	SVNWNLEYPIISNEVSVNTSCRLLQRVMFRAAMLCNRYDVCYDIGNPKGLACVKGYDF	1882
Query:	306	KFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLSN KFYDA P +++ Y Y H D+F DG+C+FWNCNVD+YPANA+VCRFDTRVLS	365
Sbjct:	1883	KFYDASPVVKSVKQFVYKYEAHKDQFLDGLCMFWNCNVDKYPANAVVCRFDTRVLSK	1939
Query:	366	LNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDIDYVPL LNLPGC+GGSLYVNKHAFHT F ++AF NLK +PFFYYSD+PC +DYVPL	425
Sbjct:	1940	LNLPGCHGGSLYVNKHAFHTNPFTRAAFENLKPMPFFYYSDTPCVYMEGMESKQVDYVPL	1999
Query:	426	KSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTRLQS +SATCITRCNLGGAVC HA EYR+YL++YN +AGF+ W+YK FD YNLWNTFTRLQS	485
Sbjct:	2000	RSATCITRCNLGGAVCLKHAEEYREYLESYNTATTAGFTFWVYKTFDFYNLWNTFTRLQS	2059
Query:	486		
Sbjct:	2060	L L 2060	
gi 75	83321 L	4 sp P29982 RRPB_CVMJH RNA-directed RNA polymerase (ORF1B)  gb AAA46458.2  open reading frame 1b [murine hepatitis viruength = 2731   37 bits (1644), Expect = 0.0	ıs]
		= 287/481 (59%), Positives = 366/481 (76%), Gaps = 5/481 (1%)	ı
Query: Sbjct:		MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ +TY RLIS+MGFK++ ++GY +FITR+EAI+ VRAW+GFD EG HATRD++GTN PLQ VTYSRLISLMGFKLDLTLDGYCKLFITRDEAIKRVRAWVGFDAEGAHATRDSIGTNFPLQ	
	1585	+TY RLIS+MGFK++ ++GY +FITR+EAI+ VRAW+GFD EG HATRD++GTN PLQ VTYSRLISLMGFKLDLTLDGYCKLFITRDEAIKRVRAWVGFDAEGAHATRDSIGTNFPLQ LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ	1644
Sbjct: Query:	1585 66	+TY RLIS+MGFK++ ++GY +FITR+EAI+ VRAW+GFD EG HATRD++GTN PLQ VTYSRLISLMGFKLDLTLDGYCKLFITRDEAIKRVRAWVGFDAEGAHATRDSIGTNFPLQ	1644 125
Sbjct: Query: Sbjct:	1585 66 1645	+TY RLIS+MGFK++ ++GY +FITR+EAI+ VRAW+GFD EG HATRD++GTN PLQ VTYSRLISLMGFKLDLTLDGYCKLFITRDEAIKRVRAWVGFDAEGAHATRDSIGTNFPLQ LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ LGFSTG++ V TG + F + A+ PPG+QFKHL+PLM +G W+VVRI+IVQ LGFSTGIDFVVEATGMFAERDGYVFKKAAARAPPGEQFKHLVPLMSRGQKWDVVRIRIVQ MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN	1644 125 1704
Sbjct: Query: Sbjct: Query:	1585 66 1645 126	+TY RLIS+MGFK++ ++GY +FITR+EAI+ VRAW+GFD EG HATRD++GTN PLQ VTYSRLISLMGFKLDLTLDGYCKLFITRDEAIKRVRAWVGFDAEGAHATRDSIGTNFPLQ LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ LGFSTG++ V TG + F + A+ PPG+QFKHL+PLM +G W+VVRI+IVQ LGFSTGIDFVVEATGMFAERDGYVFKKAAARAPPGEQFKHLVPLMSRGQKWDVVRIRIVQ	1644 125 1704 185
Sbjct: Query: Sbjct: Query: Sbjct:	1585 66 1645 126 1705	+TY RLIS+MGFK++ ++GY +FITR+EAI+ VRAW+GFD EG HATRD++GTN PLQ VTYSRLISLMGFKLDLTLDGYCKLFITRDEAIKRVRAWVGFDAEGAHATRDSIGTNFPLQ LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ LGFSTG++ V TG + F + A+ PPG+QFKHL+PLM +G W+VVRI+IVQ LGFSTGIDFVVEATGMFAERDGYVFKKAAARAPPGEQFKHLVPLMSRGQKWDVVRIRIVQ MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN MLSD L L+D VV V WA FELT ++YF K+G E C +C+KRATCF++ + Y CW MLSDHLVDLADSVVLVTWAASFELTCLRYFAKVGKEVVCSVCNKRATCFNSRTGYYGCWR HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK	1644 125 1704 185 1764
Sbjct: Query: Sbjct: Query: Sbjct: Query:	1585 66 1645 126 1705 186	+TY RLIS+MGFK++ ++GY +FITR+EAI+ VRAW+GFD EG HATRD++GTN PLQ VTYSRLISLMGFKLDLTLDGYCKLFITRDEAIKRVRAWVGFDAEGAHATRDSIGTNFPLQ LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ LGFSTG++ V TG + F + A+ PPG+QFKHL+PLM +G W+VVRI+IVQ LGFSTGIDFVVEATGMFAERDGYVFKKAAARAPPGEQFKHLVPLMSRGQKWDVVRIRIVQ MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN MLSD L L+D VV V WA FELT ++YF K+G E C +C+KRATCF++ + Y CW MLSDHLVDLADSVVLVTWAASFELTCLRYFAKVGKEVVCSVCNKRATCFNSRTGYYGCWR	1644 125 1704 185 1764 245
Sbjct: Query: Sbjct: Query: Sbjct: Query: Sbjct:	1585 66 1645 126 1705 186 1765	+TY RLIS+MGFK++ ++GY +FITR+EAI+ VRAW+GFD EG HATRD++GTN PLQ VTYSRLISLMGFKLDLTLDGYCKLFITRDEAIKRVRAWVGFDAEGAHATRDSIGTNFPLQ LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ LGFSTG++ V TG + F + A+ PPG+QFKHL+PLM +G W+VVRI+IVQ LGFSTGIDFVVEATGMFAERDGYVFKKAAARAPPGEQFKHLVPLMSRGQKWDVVRIRIVQ MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN MLSD L L+D VV V WA FELT ++YF K+G E C +C+KRATCF++ + Y CW MLSDHLVDLADSVVLVTWAASFELTCLRYFAKVGKEVVCSVCNKRATCFNSRTGYYGCWR HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK HS DY+YNP ++D+QQWG+TG+L SNHD C VH AHVAS DAIMTRCLAVH+CF K HSYSCDYLYNPLIVDIQQWGYTGSLTSNHDPICSVHKGAHVASSDAIMTRCLAVHDCFCK RVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEW	1644 125 1704 185 1764 245
Sbjct: Query: Sbjct: Query: Sbjct: Query: Sbjct: Query:	1585 66 1645 126 1705 186 1765 246	+TY RLIS+MGFK++ ++GY +FITR+EAI+ VRAW+GFD EG HATRD++GTN PLQ VTYSRLISLMGFKLDLTLDGYCKLFITRDEAIKRVRAWVGFDAEGAHATRDSIGTNFPLQ LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ LGFSTG++ V TG + F + A+ PPG+QFKHL+PLM +G W+VVRI+IVQ LGFSTGIDFVVEATGMFAERDGYVFKKAAARAPPGEQFKHLVPLMSRGQKWDVVRIRIVQ MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN MLSD L L+D VV V WA FELT ++YF K+G E C +C+KRATCF++ + Y CW MLSDHLVDLADSVVLVTWAASFELTCLRYFAKVGKEVVCSVCNKRATCFNSRTGYYGCWR HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK HS DY+YNP ++D+QQWG+TG+L SNHD C VH AHVAS DAIMTRCLAVH+CF K HSYSCDYLYNPLIVDIQQWGYTGSLTSNHDPICSVHKGAHVASSDAIMTRCLAVHDCFCK	1644 125 1704 185 1764 245 1824 305
Sbjct: Query: Sbjct: Query: Sbjct: Query: Sbjct: Query: Sbjct:	1585 66 1645 126 1705 186 1765 246 1825	+TY RLIS+MGFK++ ++GY +FITR+EAI+ VRAW+GFD EG HATRD++GTN PLQ VTYSRLISLMGFKLDLTLDGYCKLFITRDEAIKRVRAWVGFDAEGAHATRDSIGTNFPLQ LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ LGFSTG++ V TG + F + A+ PPG+QFKHL+PLM +G W+VVRI+IVQ LGFSTGIDFVVEATGMFAERDGYVFKKAAARAPPGEQFKHLVPLMSRGQKWDVVRIRIVQ MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN MLSD L L+D VV V WA FELT ++YF K+G E C +C+KRATCF++ + Y CW MLSDHLVDLADSVVLVTWAASFELTCLRYFAKVGKEVVCSVCNKRATCFNSRTGYYGCWR HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK HS DY+YNP ++D+QQWG+TG+L SNHD C VH AHVAS DAIMTRCLAVH+CF K HSYSCDYLYNPLIVDIQQWGYTGSLTSNHDPICSVHKGAHVASSDAIMTRCLAVHDCFCK RVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEW V+W++EYPII +E+ VN++CR +Q ++ ++A+L +++ V +DIGNPK + CV ++ SVNWNLEYPIISNEVSVNTSCRLLQRVMFRAAMLCNRYDVCYDIGNPKGLACVKGYDF KFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLSN	1644 125 1704 185 1764 245 1824 305 1882
Sbjct: Query: Sbjct: Query: Sbjct: Query: Sbjct: Query: Sbjct: Query:	1585 66 1645 126 1705 186 1765 246 1825 306	+TY RLIS+MGFK++ ++GY +FITR+EAI+ VRAW+GFD EG HATRD++GTN PLQ VTYSRLISLMGFKLDLTLDGYCKLFITRDEAIKRVRAWVGFDAEGAHATRDSIGTNFPLQ LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ LGFSTG++ V TG + F + A+ PPG+QFKHL+PLM +G W+VVRI+IVQ LGFSTGIDFVVEATGMFAERDGYVFKKAAARAPPGEQFKHLVPLMSRGQKWDVVRIRIVQ MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN MLSD L L+D VV V WA FELT ++YF K+G E C +C+KRATCF++ + Y CW MLSDHLVDLADSVVLVTWAASFELTCLRYFAKVGKEVVCSVCNKRATCFNSRTGYYGCWR HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK HS DY+YNP ++D+QQWG+TG+L SNHD C VH AHVAS DAIMTRCLAVH+CF K HSYSCDYLYNPLIVDIQQWGYTGSLTSNHDPICSVHKGAHVASSDAIMTRCLAVHDCFCK RVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEW V+W++EYPII +E+ VN++CR +Q ++ ++A+L +++ V +DIGNPK + CV ++ SVNWNLEYPIISNEVSVNTSCRLLQRVMFRAAMLCNRYDVCYDIGNPKGLACVKGYDF	1644 125 1704 185 1764 245 1824 305 1882 365
Sbjct: Query: Sbjct: Query: Sbjct: Query: Sbjct: Query: Sbjct: Query: Sbjct:	1585 66 1645 126 1705 186 1765 246 1825 306 1883	+TY RLIS+MGFK++ ++GY +FITR+EAI+ VRAW+GFD EG HATRD++GTN PLQ VTYSRLISLMGFKLDLTLDGYCKLFITRDEAIKRVRAWVGFDAEGAHATRDSIGTNFPLQ LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ LGFSTG++ V TG + F + A+ PPG+QFKHL+PLM +G W+VVRI+IVQ LGFSTGIDFVVEATGMFAERDGYVFKKAAARAPPGEQFKHLVPLMSRGQKWDVVRIRIVQ MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN MLSD L L+D VV V WA FELT ++YF K+G E C +C+KRATCF++ + Y CW MLSDHLVDLADSVVLVTWAASFELTCLRYFAKVGKEVVCSVCNKRATCFNSRTGYYGCWR HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK HS DY+YNP ++D+QQWG+TG+L SNHD C VH AHVAS DAIMTRCLAVH+CF K HSYSCDYLYNPLIVDIQQWGYTGSLTSNHDPICSVHKGAHVASSDAIMTRCLAVHDCFCK RVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEW V+W++EYPII +E+ VN++CR +Q ++ ++A+L +++ V +DIGNPK + CV ++ SVNWNLEYPIISNEVSVNTSCRLLQRVMFRAAMLCNRYDVCYDIGNPKGLACVKGYDF KFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLSN KFYDA P +++ Y Y H D+F DG+C+FWNCNVD+YPANA+VCRFDTRVLS	1644 125 1704 185 1764 245 1824 305 1882 365 1939

Query: 426 KSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTRLQS 485 +SATCITRCNLGGAVC HA EYR+YL++YN +AGF+ W+YK FD YNLWNTFTRLQS Sbict: 2000 RSATCITRCNLGGAVCLKHAEEYREYLESYNTATTAGFTFWVYKTFDFYNLWNTFTRLQS 2059 Query: 486 L 486 Τ, Sbjct: 2060 L 2060 >qi|26007546|ref|NP\_068668.2| ORF1ab polyprotein [Murine hepatitis virus] Length = 7178Score = 637 bits (1644), Expect = 0.0 Identities = 286/481 (59%), Positives = 364/481 (75%), Gaps = 5/481 (1%) MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ 65 Query: 6 +TY RLIS+MGFK++ ++GY +FITR+EAI+ VRAW+GFD EG HA RD++GTN PLQ Sbjct: 6032 VTYSRLISLMGFKLDLTLDGYCKLFITRDEAIKRVRAWVGFDAEGAHAIRDSIGTNFPLQ 6091 LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVO 125 Query: 66 F + A+ PPG+QFKHLIPLM +G W+VVRI+IVQ LGFSTG++ V TG + Sbjct: 6092 LGFSTGIDFVVEATGMFAERDGYVFKKAAARAPPGEQFKHLIPLMSRGQKWDVVRIRIVQ 6151 Query: 126 MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN 185 MLSD L L+D VV V WA FELT ++YF K+G E C +C KRATCF++ + Y CW Sbjct: 6152 MLSDHLADLADSVVLVTWAASFELTCLRYFAKVGREVVCSVCTKRATCFNSRTGYYGCWR 6211 Query: 186 HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK 245 DY+YNP ++D+QQWG+TG+L SNHD C VH AHVAS DAIMTRCLAVH+CF K Sbjct: 6212 HSYSCDYLYNPLIVDIQQWGYTGSLTSNHDPICSVHKGAHVASSDAIMTRCLAVHDCFCK 6271 Query: 246 RVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEW 305 V+W++EYPII +E+ VN++CR +Q ++ ++A+L +++ V +DIGNPK + CV Sbjct: 6272 SVNWNLEYPIISNEVSVNTSCRLLQRVMFRAAMLCNRYDVCYDIGNPKGLACVKG--YDF 6329 Query: 306 KFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLSN 365 KFYDA P +++ Y Y H D+F DG+C+FWNCNVD+YPANA+VCRFDTRVL+ Sbjct: 6330 KFYDASPV---VKSVKQFVYKYEAHKDQFLDGLCMFWNCNVDKYPANAVVCRFDTRVLNK 6386 Query: 366 LNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDIDYVPL 425 +DYVPL LNLPGC+GGSLYVNKHAFHT F ++AF NLK +PFFYYSD+PC Sbjct: 6387 LNLPGCNGGSLYVNKHAFHTSPFTRAAFENLKPMPFFYYSDTPCVYMEGMESKQVDYVPL 6446 Query: 426 KSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTRLQS 485 +SATCITRCNLGGAVC HA EYR+YL++YN +AGF+ W+YK FD YNLWNTFTRLQS Sbjct: 6447 RSATCITRCNLGGAVCLKHAEEYREYLESYNTATTAGFTFWVYKTFDFYNLWNTFTRLQS 6506

Query: 486 L 486

Sbjct: 6507 L 6507

>gi|7769342|gb|AAF69332.1|AF208066\_2 RNA-directed RNA polymerase [murine hepatitis virus]

Length = 2732

```
Score = 637 bits (1644), Expect = 0.0
Identities = 287/481 (59%), Positives = 366/481 (76%), Gaps = 5/481 (1%)

Query: 6 MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ 65
+TY RLIS+MGFK++ ++GY +FITR+EAIR VRAW+GFD EG HATRD++GTN PLQ

Sbjct: 1586 VTYSRLISLMGFKLDLTLDGYCKLFITRDEAIRRVRAWVGFDAEGAHATRDSIGTNFPLQ 1645
```

- Query: 66 LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ 125 LGFSTG++ V TG + F + A+ PPG+QFKHL+PLM +G W+VVRI+IVQ
- Sbjct: 1646 LGFSTGIDFVVEATGMFAERDGYVFKKAVARAPPGEQFKHLVPLMSRGQKWDVVRIRIVQ 1705
- Query: 126 MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN 185 MLSD L L+D VV V WA FELT ++YF K+G E C +C+KRATCF++ + Y CW
- Sbjct: 1706 MLSDHLVDLADSVVLVTWAASFELTCLRYFAKVGKEVVCSVCNKRATCFNSRTGYYGCWR 1765
- Query: 186 HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK 245 HS DY+YNP ++D+QQWG+TG+L SNHD C VH AHVAS DAIMTRCLAVH+CF K
- Sbjct: 1766 HSYSCDYLYNPLIVDIQQWGYTGSLTSNHDLICSVHKGAHVASSDAIMTRCLAVHDCFCK 1825
- Query: 246 RVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEW 305 V+WS+EYPII +E+ VN++CR +Q ++ ++A+L +++ V +DIGNPK + CV ++
- Sbjct: 1826 SVNWSLEYPIISNEVSVNTSCRLLQRVMFRAAMLCNRYDVCYDIGNPKGLACVKG--YDF 1883
- Query: 306 KFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLSN 365 KFYDA P +++ Y Y H D+F DG+C+FWNCNVD+YPANA+VCRFDTRVL+
- Sbjct: 1884 KFYDASPV---VKSVKQFVYKYEAHKDQFLDGLCMFWNCNVDKYPANAVVCRFDTRVLNK 1940
- Query: 366 LNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDIDYVPL 425 LNLPGC+GGSLYVNKHAFHT F ++AF NLK +PFFYYSD+PC +DYVPL
- Sbjct: 1941 LNLPGCNGGSLYVNKHAFHTSPFTRAAFENLKPMPFFYYSDTPCVYMEGMESKQVDYVPL 2000
- Query: 426 KSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTRLQS 485 +SATCITRCNLGGAVC HA +YR+YL++YN +AGF+ W+YK FD YNLWNTFTRLQS
- Sbjct: 2001 RSATCITRCNLGGAVCLKHAEDYREYLESYNTATTAGFTFWVYKTFDFYNLWNTFTRLQS 2060

Query: 486 L 486

Sbjct: 2061 L 2061

>gi|6625761|gb|AAF19384.1|AF201929\_2 RNA-directed RNA polymerase [murine hepatitis virus strain 2] gi|7739595|gb|AAF68920.1|AF207902\_2 RNA-directed RNA polymerase [murine hepatitis virus strain ML-11] Length = 2733

Score = 637 bits (1643), Expect = 0.0 Identities = 287/481 (59%), Positives = 366/481 (76%), Gaps = 5/481 (1%)

- Query: 6 MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ 65 +TY RLIS+MGFK++ ++GY +FITR+EAIR VRAW+GFD EG HATRD++GTN PLQ
- Sbjct: 1587 VTYSRLISLMGFKLDLTLDGYCKLFITRDEAIRRVRAWVGFDAEGAHATRDSIGTNFPLQ 1646
- Query: 66 LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ 125 LGFSTG++ V TG + F + A+ PPG+QFKHL+PLM +G W+VVRI+IVQ

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Sbjct: 1647 LGFSTGIDFVVEATGMFAERDGYVFKKAVARAPPGEQFKHLVPLMSRGOKWDVVRIRIVO 1706
Query: 126 MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN 185
           MLSD L L+D VV V WA FELT ++YF K+G E C +C+KRATCF++ + Y CW
Sbict: 1707 MLSDHLVDLADSVVLVTWAASFELTCLRYFAKVGKEVVCSVCNKRATCFNSRTGYYGCWR 1766
Ouery: 186 HSVGFDYVYNPFMIDVOOWGFTGNLOSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK 245
                DY+YNP ++D+OOWG+TG+L SNHD C VH AHVAS DAIMTRCLAVH+CF K
Sbjct: 1767 HSYSCDYLYNPLIVDIQQWGYTGSLTSNHDLICSVHKGAHVASSDAIMTRCLAVHDCFCK 1826
Query: 246 RVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEW 305
            V+WS+EYPII +E+ VN++CR +Q ++ ++A+L +++ V +DIGNPK + CV
Sbjct: 1827 SVNWSLEYPIISNEVSVNTSCRLLORVMFRAAMLCNRYDVCYDIGNPKGLACVKG--YDF 1884
Ouery: 306 KFYDAOPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLSN 365
           KFYDA P +++ Y Y H D+F DG+C+FWNCNVD+YPANA+VCRFDTRVL+
Sbjct: 1885 KFYDASPV---VKSVKQFVYKYEAHKDQFLDGLCMFWNCNVDKYPANAVVCRFDTRVLNK 1941
Query: 366 LNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDIDYVPL 425
           LNLPGC+GGSLYVNKHAFHT F ++AF NLK +PFFYYSD+PC
Sbjct: 1942 LNLPGCNGGSLYVNKHAFHTSPFTRAAFENLKPMPFFYYSDTPCVYMEGMESKQVDYVPL 2001
Ouery: 426 KSATCITRCNLGGAVCRHHANEYROYLDAYNMMISAGFSLWIYKOFDTYNLWNTFTRLOS 485
            +SATCITRCNLGGAVC HA +YR+YL++YN
                                             +AGF+ W+YK FD YNLWNTFTRLQS
Sbjct: 2002 RSATCITRCNLGGAVCLKHAEDYREYLESYNTATTAGFTFWVYKTFDFYNLWNTFTRLQS 2061
Query: 486 L 486
Sbjct: 2062 L 2062
>gi|2641128|gb|AAB86818.1| RNA-directed RNA polymerase [murine hepatitis
virusl
         Length = 2733
 Score = 635 bits (1637), Expect = 0.0
 Identities = 286/481 (59%), Positives = 364/481 (75%), Gaps = 5/481 (1%)
Ouery: 6 MTYRRLISMMGFKMNYOVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLO 65
            +TY RLIS+MGFK++ ++GY +FITR+EAI+ VRAW+GFD EG HA RD++GTN PLQ
Sbjct: 1587 VTYSRLISLMGFKLDLTLDGYCKLFITRDEAIKRVRAWVGFDAEGAHAIRDSIGTNFPLQ 1646
           LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVO 125
Query: 66
           LGFSTG++ V TG + F + A+ PPG+QFKHLIPLM +G W+VVRI+IVQ
Sbjct: 1647 LGFSTGIDFVVEATGMFAERDGYVFKKAAARAPPGEQFKHLIPLMSRGQKWDVVRIRIVQ 1706
Query: 126 MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN 185
           MLSD L L+D VV V WA FELT ++YF K+G E C +C KRATCF++ + Y CW
Sbjct: 1707 MLSDHLADLADSVVLVTWAASFELTCLRYFAKVGREVVCSVCTKRATCFNSRTGYYGCWR 1766
Query: 186 HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK 245
                DY+YNP ++D+OOWG+TG+L SNHD C VH AHVAS DAIMTRCLAVH+CF K
Sbjet: 1767 HSYSCDYLYNPLIVDIQQWGYTGSLTSNHDPICSVHKGAHVASSDAIMTRCLAVHDCFCK 1826
Query: 246 RVDWSVEYPIIGDELRVNSACRKVOHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEW 305
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V+W++EYPII +E+ VN++CR +Q ++ ++A+L +++ V +DIGNPK + CV

Sbjct:	1827	SVNWNLEYPIISNEVSVNTSCRLLQRVMFRAAMLCNRYDVCYDIGNPKGLACVKGYDF	1884
Query:	306	KFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLSN KFYDA P +++ Y Y H D+F DG+C+FWNCNVD+YPANA+VCRFDTRVL+	365
Sbjct:	1885	KFYDASPVVKSVKQFVYKYEAHKDQFLDGLCMFWNCNVDKYPANAVVCRFDTRVLNK	1941
Query:	366		425
Sbjct:	1942	LNLPGC+GGSLYVNKHAFHT F ++AF NLK +PFFYYSD+PC +DYVPL LNLPGCNGGSLYVNKHAFHTSPFTRAAFENLKPMPFFYYSDTPCVYMEGMESKQVDYVPL	2001
Query:	426	KSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTRLQS +SATCITRCNLGGAVC HA EYR+YL++YN +AGF+ W+YK FD YNLWNTFTRLQS	485
Sbjct:	2002	RSATCITRCNLGGAVCLKHAEEYREYLESYNTATTAGFTFWVYKTFDFYNLWNTFTRLQS	2061
Query:	486	L 486	
Sbjct:	2062	L 2062	
hepati	tis v Le	ength = 2733	
		34 bits (1636), Expect = 0.0 = 286/481 (59%), Positives = 364/481 (75%), Gaps = 5/481 (1%)	)
Query:	6	MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ +TY RLIS+MGFK++ ++GY +FITR+EAI+ VRAW+GFD EG HA RD++GTN PLQ	65
Sbjct:	1587	VTYSRLISLMGFKLDLTLDGYCKLFITRDEAIKRVRAWVGFDAEGAHAIRDSIGTNFPLQ	1646
Query:	66	LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ LGFSTG++ V TG + F + A+ PPG+OFKHLIPLM +G W+VVRI+IVQ	125
Sbjct:	1647	LGFSTGIDFVVEATGMFAERDGYVFKKAAARAPPGEQFKHLIPLMSRGQKWDVVRIRIVQ	1706
Query:	126	MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN MLSD L L+D VV V WA FELT ++YF K+G E C +C KRATCF++ + Y CW	185
Sbjct:	1707	${\tt MLSDHLVDLADSVVLVTWAASFELTCLRYFAKVGREVVCSVCTKRATCFNSRTGYYGCWR}$	1766
Query:	186	HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK HS DY+YNP ++D+QQWG+TG+L SNHD C VH AHVAS DAIMTRCLAVH+CF K	245
Sbjct:	1767	HSYSCDYLYNPLIVDIQQWGYTGSLTSNHDPICSVHKGAHVASSDAIMTRCLAVHDCFCK	1826
Query:	246	RVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEW V+W++EYPII +E+ VN++CR +Q ++ ++A+L +++ V +DIGNPK + CV ++	305
Sbjct:	1827	SVNWNLEYPIISNEVSVNTSCRLLQRVMFRAAMLCNRYDVCYDIGNPKGLACVKGYDF	1884
Query:	306	KFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLSN KFYDA P +++ Y Y H D+F DG+C+FWNCNVD+YPANA+VCRFDTRVL+	365
Sbjct:	1885	KFYDASPVVKSVKQFVYKYEAHKDQFLDGLCMFWNCNVDKYPANAVVCRFDTRVLNK	1941
Query:	366	LNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDIDYVPL LNLPGC+GGSLYVNKHAFHT F ++AF NLK +PFFYYSD+PC +DYVPL	425
Sbjct:	1942	LNLPGCNGGSLYVNKHAFHTSPFTRAAFENLKPMPFFYYSDTPCVYMEGMESKQVDYVPL	2001
Query:	426	$ \begin{array}{llllllllllllllllllllllllllllllllllll$	485

Sbjct: 2002 RSATCITRCNLGGAVCLKHAEEYREYLESYNTATTAGFTFWVYKTFDFYNLWNTFTRLQS 2061

Query: 486 L 486

L

Sbjct: 2062 L 2062

>gi|133592|sp|P16342|RRPB\_CVMA5 RNA-DIRECTED RNA POLYMERASE (ORF1B) gi|93916|pir||S15760 genome polyprotein - murine hepatitis virus (strain A59)

Length = 2733

Score = 634 bits (1636), Expect = 0.0 Identities = 286/481 (59%), Positives = 364/481 (75%), Gaps = 5/481 (1%)

Query: 6 MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ 65 +TY RLIS+MGFK++ ++GY +FITR+EAI+ VRAW+GFD EG HA RD++GTN PLQ

Sbjct: 1587 VTYSRLISLMGFKLDLTLDGYCKLFITRDEAIKRVRAWVGFDAEGAHAIRDSIGTNFPLQ 1646

Query: 66 LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ 125 LGFSTG++ V TG + F + A+ PPG+QFKHLIPLM +G W+VVRI+IVQ

Sbjct: 1647 LGFSTGIDFVVEATGMFAERDGYVFKKAAARAPPGEQFKHLIPLMSRGQKWDVVRIRIVQ 1706

Query: 126 MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN 185 MLSD L L+D VV V WA FELT ++YF K+G E C +C KRATCF++ + Y CW

Sbjct: 1707 MLSDHLVDLADSVVLVTWAASFELTCLRYFAKVGREVVCSVCTKRATCFNSRTGYYGCWR 1766

Query: 186 HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK 245 HS DY+YNP++D+QQWG+TG+L SNHD C VH AHVAS DAIMTRCLAVH+CF K

Sbjct: 1767 HSYSCDYLYNPLIVDIQQWGYTGSLTSNHDPICSVHKGAHVASSDAIMTRCLAVHDCFCK 1826

Query: 246 RVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEW 305 V+W++EYPII +E+ VN++CR +O ++ ++A+L +++ V +DIGNPK + CV ++

Sbjct: 1827 SVNWNLEYPIISNEVSVNTSCRLLQRVMFRAAMLCNRYDVCYDIGNPKGLACVKG--YDF 1884

Query: 306 KFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLSN 365 KFYDA P +++ Y Y H D+F DG+C+FWNCNVD+YPANA+VCRFDTRVL+

Sbict: 1885 KFYDASPV---VKSVKOFVYKYEAHKDOFLDGLCMFWNCNVDKYPANAVVCRFDTRVLNK 1941

Query: 366 LNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDIDYVPL 425 LNLPGC+GGSLYVNKHAFHT F ++AF NLK +PFFYYSD+PC +DYVPL

Sbjct: 1942 LNLPGCNGGSLYVNKHAFHTSPFTRAAFENLKPMPFFYYSDTPCVYMEGMESKQVDYVPL 2001

Query: 426 KSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTRLQS 485

+SATCITRCNLGGAVC HA EYR+YL++YN +AGF+ W+YK FD YNLWNTFTRLQS

Sbjct: 2002 RSATCITRCNLGGAVCLKHAEEYREYLESYNTATTAGFTFWVYKTFDFYNLWNTFTRLQS 2061

Query: 486 L 486

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Sbjct: 2062 L 2062

>gi|26008080|ref|NP\_150073.2| orf1ab polyprotein [Bovine coronavirus]
Length = 7094

Score = 633 bits (1633), Expect = e-180

163/193 Identities = 284/481 (59%), Positives = 367/481 (76%), Gaps = 5/481 (1%) Query: 6 MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ 65 +TY RLIS+MGFK++ ++GY +FIT+EEA++ VRAW+GFD EG HATRD++GTN PLQ Sbjct: 5948 VTYSRLISLMGFKLDVTLDGYCKLFITKEEAVKRVRAWVGFDAEGAHATRDSIGTNFPLQ 6007 Query: 66 LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ 125 LGFSTG++ V TG + F + AK PPG+QFKHLIPLM +G W+VVR +IVQ Sbjct: 6008 LGFSTGIDFVVEATGLFADRDGYSFKKAVAKAPPGEQFKHLIPLMTRGQRWDVVRPRIVQ 6067 Query: 126 MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN 185 M +D L LSD VV V WA FELT ++YF K+G E +C +C KRAT +++ + Y CW Sbjct: 6068 MFADHLIDLSDCVVLVTWAANFELTCLRYFAKVGREISCNVCTKRATAYNSRTGYYGCWR 6127 Query: 186 HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK 245 HSV DY+YNP ++D+QQWG+ G+L SNHD +C VH AHVAS DAIMTRCLAV++CF Sbjct: 6128 HSVTCDYLYNPLIVDIQQWGYIGSLSSNHDLYCSVHKGAHVASSDAIMTRCLAVYDCFCN 6187 Query: 246 RVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEW 305 ++W+VEYPII +EL +N++CR +Q +++K+A+L +++ + +DIGNPKAI CV + ++ Sbjct: 6188 NINWNVEYPIISNELSINTSCRVLQRVMLKAAMLCNRYTLCYDIGNPKAIACV--KDFDF 6245 Query: 306 KFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLSN 365 KFYDAQP ++ L YS+ H D F DG+C+FWNCNVD+YP NA+VCRFDTRVL+N Sbjct: 6246 KFYDAQPI---VKSVKTLLYSFEAHKDSFKDGLCMFWNCNVDKYPPNAVVCRFDTRVLNN 6302 Query: 366 LNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDIDYVPL 425 LNLPGC+GGSLYVNKHAFHT F ++AF +LK +PFFYYSD+PC Sbjct: 6303 LNLPGCNGGSLYVNKHAFHTKPFSRAAFEHLKPMPFFYYSDTPCVYMDGMDAKQVDYVPL 6362 Query: 426 KSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTRLQS 485 KSATCITRCNLGGAVC HA EYR+YL++YN +AGF+ W+YK FD YNLWNTFT+LQS Sbjct: 6363 KSATCITRCNLGGAVCLKHAEEYREYLESYNTATTAGFTFWVYKTFDFYNLWNTFTKLQS 6422 Query: 486 L 486 Sbjct: 6423 L 6423 >gi|15077820|gb|AAK83365.1| replicase [bovine coronavirus] Length = 7094Score = 633 bits (1633), Expect = e-180 Identities = 284/481 (59%), Positives = 367/481 (76%), Gaps = 5/481 (1%) Query: 6 MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ 65 +TY RLIS+MGFK++ ++GY +FIT+EEA++ VRAW+GFD EG HATRD++GTN PLQ Sbjct: 5948 VTYSRLISLMGFKLDVTLDGYCKLFITKEEAVKRVRAWVGFDAEGAHATRDSIGTNFPLO 6007 LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ 125 Query: 66 LGFSTG++ V TG + F + AK PPG+QFKHLIPLM +G W+VVR +IVQ Sbjct: 6008 LGFSTGIDFVVEATGLFADRDGYSFKKAVAKAPPGEQFKHLIPLMTRGQRWDVVRPRIVQ 6067

Query: 126 MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN 185 M +D L LSD VV V WA FELT ++YF K+G E +C +C KRAT +++ + Y CW Sbjct: 6068 MFADHLIDLSDCVVLVTWAANFELTCLRYFAKVGREISCNVCTKRATAYNSRTGYYGCWR 6127

Query:	186	HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK HSV DY+YNP ++D+QQWG+ G+L SNHD +C VH AHVAS DAIMTRCLAV++CF	245
Sbjct:	6128	HSVTCDYLYNPLIVDIQQWGYIGSLSSNHDLYCSVHKGAHVASSDAIMTRCLAVYDCFCN	6187
Query:	246	RVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEW ++W+VEYPII +EL +N++CR +Q +++K+A+L +++ + +DIGNPKAI CV + ++	305
Sbjct:	6188	NINWNVEYPIISNELSINTSCRVLQRVMLKAAMLCNRYTLCYDIGNPKAIACVKDFDF	6245
Query:	306	KFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLSN KFYDAQP ++ L YS+ H D F DG+C+FWNCNVD+YP NA+VCRFDTRVL+N	365
Sbjct:	6246	KFYDAQPIVKSVKTLLYSFEAHKDSFKDGLCMFWNCNVDKYPPNAVVCRFDTRVLNN	6302
Query:	366	LNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDIDYVPL LNLPGC+GGSLYVNKHAFHT F ++AF +LK +PFFYYSD+PC +DYVPL	425
Sbjct:	6303	LNLPGCNGGSLYVNKHAFHTKPFSRAAFEHLKPMPFFYYSDTPCVYMDGMDAKQVDYVPL	6362
Query:	426	KSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTRLQS KSATCITRCNLGGAVC HA EYR+YL++YN +AGF+ W+YK FD YNLWNTFT+LQS	485
Sbjct:	6363	KSATCITRCNLGGAVCLKHAEEYREYLESYNTATTAGFTFWVYKTFDFYNLWNTFTKLQS	6422
Query:	486	L 486	
Sbjct:	6423	L 6423	
>gi 18		2 gb AAL57305.1  replicase [bovine coronavirus] ength = 7094	
		33 bits (1633), Expect = e-180 = 284/481 (59%), Positives = 367/481 (76%), Gaps = 5/481 (1%)	)
Query:	6 -	MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ +TY RLIS+MGFK++ ++GY +FIT+EEA++ VRAW+GFD EG HATRD++GTN PLQ	65
Sbjct:	5948	VTYSRLISLMGFKLDVTLDGYCKLFITKEEAVKRVRAWVGFDAEGAHATRDSIGTNFPLQ	6007
Query:	66	LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ LGFSTG++ V TG + F + AK PPG+QFKHLIPLM +G W+VVR +IVQ	125
Sbjct:	6008	LGFSTGIDFVVEATGLFADRDGYSFKKAVAKAPPGEQFKHLIPLMTRGQRWDVVRPRIVQ	6067
Query:	126	MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN M +D L LSD VV V WA FELT ++YF K+G E +C +C KRAT +++ + Y CW	185
Sbjct:	6068	MFADHLIDLSDCVVLVTWAANFELTCLRYFAKVGREISCNVCTKRATAYNSRTGYYGCWR	6127
Query:	186	HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK HSV DY+YNP ++D+QQWG+ G+L SNHD +C VH AHVAS DAIMTRCLAV++CF	245
Sbjct:	6128	HSVTCDYLYNPLIVDIQQWGYIGSLSSNHDLYCSVHKGAHVASSDAIMTRCLAVYDCFCN	6187
0	246	THE POST TO BE DURING A DESCRIPTION OF THE PROPERTY OF THE PRO	205

Query: 306 KFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLSN 365 KFYDAQP ++ L YS+ H D F DG+C+FWNCNVD+YP NA+VCRFDTRVL+N

Sbjct: 6188 NINWNVEYPIISNELSINTSCRVLQRVMLKAAMLCNRYTLCYDIGNPKAIACV--KDFDF 6245

Query: 246 RVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEW 305

++W+VEYPII +EL +N++CR +Q +++K+A+L +++ + +DIGNPKAI CV + ++

Sbjct: 6246 KFYDAQPI---VKSVKTLLYSFEAHKDSFKDGLCMFWNCNVDKYPPNAVVCRFDTRVLNN 6302

WO 2004/092360 PCT/US2004/011710

#### 165/193

Query: 366 LNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDIDYVPL 425 LNLPGC+GGSLYVNKHAFHT F ++AF +LK +PFFYYSD+PC Sbjct: 6303 LNLPGCNGGSLYVNKHAFHTKPFSRAAFEHLKPMPFFYYSDTPCVYMDGMDAKOVDYVPL 6362 Query: 426 KSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTRLQS 485 KSATCITRCNLGGAVC HA EYR+YL++YN +AGF+ W+YK FD YNLWNTFT+LOS Sbjct: 6363 KSATCITRCNLGGAVCLKHAEEYREYLESYNTATTAGFTFWVYKTFDFYNLWNTFTKLOS 6422 Query: 486 L 486 Sbjct: 6423 L 6423 >gi|7769353|gb|AAF69342.1|AF208067\_2 RNA-directed RNA polymerase [murine hepatitis virus] Length = 2733Score = 633 bits (1633), Expect = e-180 Identities = 285/481 (59%), Positives = 364/481 (75%), Gaps = 5/481 (1%) Query: 6 MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ 65 ++Y RLIS+MGFK++ ++GY +FITR+EAI+ VRAW+GFD EG HA RD++GTN PLO Sbjct: 1587 VSYSRLISLMGFKLDLTLDGYCKLFITRDEAIKRVRAWVGFDAEGAHAIRDSIGTNFPLQ 1646 Query: 66 LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVO 125 LGFSTG++ V TG + F + A+ PPG+OFKHLIPLM +G W+VVRI+IVO Sbjct: 1647 LGFSTGIDFVVEATGMFAERDGYVFKKAAARAPPGEOFKHLIPLMSRGOKWDVVRIRIVO 1706 Query: 126 MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN 185 MLSD L L+D VV V WA FELT ++YF K+G E C +C KRATCF++ + Y CW Sbjct: 1707 MLSDHLVDLADSVVLVTWAASFELTCLRYFAKVGREVVCSVCTKRATCFNSRTGYYGCWR 1766 Query: 186 HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK 245 DY+YNP ++D+QQWG+TG+L SNHD C VH AHVAS DAIMTRCLAVH+CF K Sbjct: 1767 HSYSCDYLYNPLIVDIQQWGYTGSLTSNHDPICSVHKGAHVASSDAIMTRCLAVHDCFCK 1826 Query: 246 RVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEW 305 V+W++EYPII +E+ VN++CR +Q ++ ++A+L +++ V +DIGNPK + CV Sbjct: 1827 SVNWNLEYPIISNEVSVNTSCRLLORVMFRAAMLCNRYDVCYDIGNPKGLACVKG--YDF 1884 Ouery: 306 KFYDAOPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLSN 365 KFYDA P +++ Y Y H D+F DG+C+FWNCNVD+YPANA+VCRFDTRVL+ Sbjct: 1885 KFYDASPV---VKSVKQFVYKYEAHKDQFLDGLCMFWNCNVDKYPANAVVCRFDTRVLNK 1941 Query: 366 LNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDIDYVPL 425 LNLPGC+GGSLYVNKHAFHT F ++AF NLK +PFFYYSD+PC Sbjct: 1942 LNLPGCNGGSLYVNKHAFHTSPFTRAAFENLKPMPFFYYSDTPCVYMEGMESKOVDYVPL 2001 Ouery: 426 KSATCITRCNLGGAVCRHHANEYROYLDAYNMMISAGFSLWIYKOFDTYNLWNTFTRLOS 485 +SATCITRCNLGGAVC HA EYR+YL++YN +AGF+ W+YK FD YNLWNTFTRLQS Sbict: 2002 RSATCITRCNLGGAVCLKHAEEYREYLESYNTATTAGFTFWVYKTFDFYNLWNTFTRLOS 2061 Query: 486 L 486 Sbjct: 2062 L 2062

>gi|17529672|gb|AAL40397.1|AF220295\_2 RNA polymerase 1b [bovine coronavirus]

Length = 2685

Score = 623 bits (1607), Expect = e-177 Identities = 282/481 (58%), Positives = 365/481 (75%), Gaps = 5/481 (1%)

Query: 6 MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ 65 +TY RLIS+MGFK++ ++GY +FIT+EEA++ VRAW+GFD EG HATRD++GTN PLQ

Sbjct: 1574 VTYSRLISLMGFKLDVTLDGYCKLFITKEEAVKRVRAWVGFDAEGAHATRDSIGTNFPLQ 1633

Query: 66 LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ 125 LGFSTG++ V TG + F + AK PPG+QFKHLIPLM +G W+VVR +IVQ

Sbjct: 1634 LGFSTGIDFVVEATGLFADRDGYSFKKAVAKAPPGEQFKHLIPLMTRGQRWDVVRPRIVQ 1693

Query: 126 MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN 185 M +D L LSD VV V WA FELT ++YF K+G E +C + KRAT +++ + Y CW

Sbjct: 1694 MFADHLIDLSDCVVLVTWAANFELTCLRYFAKVGREISCNVSTKRATAYNSRTGYYGCWR 1753

Query: 186 HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK 245 HSV DY+YNP ++D+QOWG+ G+L SNHD +C VH AHVAS DAIMTRCLAV++CF

Sbjct: 1754 HSVTCDYLYNPLIVDIQQWGYIGSLSSNHDLYCSVHKGAHVASSDAIMTRCLAVYDCFCN 1813

Query: 246 RVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEW 305 ++W+VEYPII +EL +N++CR +Q +++K+A+L +++ + +DIGNPKAI CV + ++

Sbjct: 1814 NINWNVEYPIISNELSINTSCRVLQRVMLKAAMLCNRYTLCYDIGNPKAIACV--KDFDF 1871

Query: 306 KFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLSN 365 KFYDAQP ++ L Y + H D F DG+C+FWNCNVD+YP NA+VCRFDTRVL+N

Sbict: 1872 KFYDAOPI---VKSVKTLLYFFEAHKDSFKDGLCMFWNCNVDKYPPNAVVCRFDTRVLNN 1928

Query: 366 LNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDIDYVPL 425 LNLPGC+GGSLYVNKHAFHT F ++AF +LK +PFFYYSD+PC +DYVPL

Sbjct: 1929 LNLPGCNGGSLYVNKHAFHTKPFSRAAFEHLKPMPFFYYSDTPCVYMDGMDAKQVDYVPL 1988

Query: 426 KSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTRLQS 485 KSATCITRCNLGGAVC HA EYR+YL++YN +AGF+ W+YK FD YNLWNTFT+LQS

Sbjct: 1989 KSATCITRCNLGGAVCLKHAEEYREYLESYNTATTAGFTFWVYKTFDFYNLWNTFTKLQS 2048

Query: 486 L 486

L

Sbjct: 2049 L 2049

>gi|25121571|ref|NP\_740618.1| coronavirus nsp11 [Murine hepatitis virus]
Length = 521

Score = 622 bits (1603), Expect = e-177 Identities = 284/479 (59%), Positives = 362/479 (75%), Gaps = 5/479 (1%)

Query: 6 MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ 65 +TY RLIS+MGFK++ ++GY +FITR+EAI+ VRAW+GFD EG HA RD++GTN PLQ

Sbjct: 48 VTYSRLISLMGFKLDLTLDGYCKLFITRDEAIKRVRAWVGFDAEGAHAIRDSIGTNFPLQ 107

Query: 66 LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ 125

01-1 ab.	100	LGFSTG++ V TG + F + A+ PPG+QFKHLIPLM +G W+VVRI+IVQ
-		LGFSTGIDFVVEATGMFAERDGYVFKKAAARAPPGEQFKHLIPLMSRGQKWDVVRIRIVQ 167
Query:	126	MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN 185 MLSD L L+D VV V WA FELT ++YF K+G E C +C KRATCF++ + Y CW
Sbjct:	168	MLSDHLADLADSVVLVTWAASFELTCLRYFAKVGREVVCSVCTKRATCFNSRTGYYGCWR 227
Query:	186	HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK 245 HS DY+YNP ++D+QQWG+TG+L SNHD C VH AHVAS DAIMTRCLAVH+CF K
Sbjct:	228	HSYSCDYLYNPLIVDIQQWGYTGSLTSNHDPICSVHKGAHVASSDAIMTRCLAVHDCFCK 287
Query:	246	RVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEW 305 V+W++EYPII +E+ VN++CR +Q ++ ++A+L +++ V +DIGNPK + CV ++
Sbjct:	288	SVNWNLEYPIISNEVSVNTSCRLLQRVMFRAAMLCNRYDVCYDIGNPKGLACVKGYDF 345
Query:	306	KFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLSN 365 KFYDA P +++ Y Y H D+F DG+C+FWNCNVD+YPANA+VCRFDTRVL+
Sbjct:	346	KFYDASPVVKSVKQFVYKYEAHKDQFLDGLCMFWNCNVDKYPANAVVCRFDTRVLNK 402
Query:	366	LNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDIDYVPL 425 LNLPGC+GGSLYVNKHAFHT F ++AF NLK +PFFYYSD+PC +DYVPL
Sbjct:	403	LNLPGCNGGSLYVNKHAFHTSPFTRAAFENLKPMPFFYYSDTPCVYMEGMESKQVDYVPL 462
Query:	426	KSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTRLQ 484 +SATCITRCNLGGAVC HA EYR+YL++YN +AGF+ W+YK FD YNLWNTFTRLQ
Sbjct:	463	RSATCITRCNLGGAVCLKHAEEYREYLESYNTATTAGFTFWVYKTFDFYNLWNTFTRLQ 521
,	]	92 ref NP_742140.1  coronavirus nsp11 [Bovine coronavirus] Length = 521
Score	] - :	
Score	: = ( ities	Length = 521  617 bits (1590), Expect = e-175  s = 282/479 (58%), Positives = 365/479 (76%), Gaps = 5/479 (1%)  MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ 65
Score Ident:	= ( ities	Length = 521 517 bits (1590), Expect = e-175 s = 282/479 (58%), Positives = 365/479 (76%), Gaps = 5/479 (1%)
Score Ident: Query: Sbjct:	= ( ities 6 48	Length = 521  517 bits (1590), Expect = e-175  5 = 282/479 (58%), Positives = 365/479 (76%), Gaps = 5/479 (1%)  MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ 65  +TY RLIS+MGFK++ ++GY +FIT+EEA++ VRAW+GFD EG HATRD++GTN PLQ  VTYSRLISLMGFKLDVTLDGYCKLFITKEEAVKRVRAWVGFDAEGAHATRDSIGTNFPLQ 10  LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ 125
Score Ident: Query: Sbjct: Query:	= 0 ities 6 48	Length = 521  617 bits (1590), Expect = e-175  5 = 282/479 (58%), Positives = 365/479 (76%), Gaps = 5/479 (1%)  MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ 65  +TY RLIS+MGFK++ ++GY +FIT+EEA++ VRAW+GFD EG HATRD++GTN PLQ  VTYSRLISLMGFKLDVTLDGYCKLFITKEEAVKRVRAWVGFDAEGAHATRDSIGTNFPLQ 107
Score Ident: Query: Sbjct: Query: Sbjct:	= 0 ities 6 48 66	Length = 521  617 bits (1590), Expect = e-175  5 = 282/479 (58%), Positives = 365/479 (76%), Gaps = 5/479 (1%)  MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ 65  +TY RLIS+MGFK++ ++GY +FIT+EEA++ VRAW+GFD EG HATRD++GTN PLQ  VTYSRLISLMGFKLDVTLDGYCKLFITKEEAVKRVRAWVGFDAEGAHATRDSIGTNFPLQ 10  LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ 12  LGFSTG++ V TG + F + AK PPG+QFKHLIPLM +G W+VVR +IVQ  LGFSTGIDFVVEATGLFADRDGYSFKKAVAKAPPGEQFKHLIPLMTRGQRWDVVRPRIVQ 16  MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN 185
Score Ident: Query: Sbjct: Query: Sbjct: Query:	= 0 ities 6 48 66 108	Length = 521  617 bits (1590), Expect = e-175  5 = 282/479 (58%), Positives = 365/479 (76%), Gaps = 5/479 (1%)  MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ 65  +TY RLIS+MGFK++ ++GY +FIT+EEA++ VRAW+GFD EG HATRD++GTN PLQ  VTYSRLISLMGFKLDVTLDGYCKLFITKEEAVKRVRAWVGFDAEGAHATRDSIGTNFPLQ 10'  LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ 12!  LGFSTG++ V TG + F + AK PPG+QFKHLIPLM +G W+VVR +IVQ  LGFSTGIDFVVEATGLFADRDGYSFKKAVAKAPPGEQFKHLIPLMTRGQRWDVVRPRIVQ 16'
Score Ident: Query: Sbjct: Query: Sbjct: Query: Sbjct:	= (ities 6 48 66 108 126 168	Length = 521  517 bits (1590), Expect = e-175  5 = 282/479 (58%), Positives = 365/479 (76%), Gaps = 5/479 (1%)  MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ 65  +TY RLIS+MGFK++ ++GY +FIT+EEA++ VRAW+GFD EG HATRD++GTN PLQ  VTYSRLISLMGFKLDVTLDGYCKLFITKEEAVKRVRAWVGFDAEGAHATRDSIGTNFPLQ 10°  LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ 12!  LGFSTG++ V TG + F + AK PPG+QFKHLIPLM +G W+VVR +IVQ  LGFSTGIDFVVEATGLFADRDGYSFKKAVAKAPPGEQFKHLIPLMTRGQRWDVVRPRIVQ 16°  MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN 18!  M +D L LSD VV V WA FELT ++YF K+G E +C +C KRAT +++ + Y CW  MFADHLIDLSDCVVLVTWAANFELTCLRYFAKVGREISCNVCTKRATAYNSRTGYYGCWR 22°  HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK 24!
Score Ident: Query: Sbjct: Query: Sbjct: Query: Sbjct: Query:	= 0 ities 6 48 66 108 126 168	Length = 521  517 bits (1590), Expect = e-175  s = 282/479 (58%), Positives = 365/479 (76%), Gaps = 5/479 (1%)  MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ 65  +TY RLIS+MGFK++ ++GY +FIT+EEA++ VRAW+GFD EG HATRD++GTN PLQ  VTYSRLISLMGFKLDVTLDGYCKLFITKEEAVKRVRAWVGFDAEGAHATRDSIGTNFPLQ 10  LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ 12!  LGFSTG++ V TG + F + AK PPG+QFKHLIPLM +G W+VVR +IVQ  LGFSTGIDFVVEATGLFADRDGYSFKKAVAKAPPGEQFKHLIPLMTRGQRWDVVRPRIVQ 16  MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN 18!  M +D L LSD VV V WA FELT ++YF K+G E +C +C KRAT +++ + Y CW  MFADHLIDLSDCVVLVTWAANFELTCLRYFAKVGREISCNVCTKRATAYNSRTGYYGCWR 22
Score Ident: Query: Sbjct: Query: Sbjct: Query: Sbjct: Query: Sbjct:	= 0 ities 6 48 66 108 126 168 186 228	Length = 521  617 bits (1590), Expect = e-175  8 = 282/479 (58%), Positives = 365/479 (76%), Gaps = 5/479 (1%)  MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ 65  +TY RLIS+MGFK++ ++GY +FIT+EEA++ VRAW+GFD EG HATRD++GTN PLQ  VTYSRLISLMGFKLDVTLDGYCKLFITKEEAVKRVRAWVGFDAEGAHATRDSIGTNFPLQ 10'  LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ 12!  LGFSTG++ V TG + F + AK PPG+QFKHLIPLM +G W+VVR +IVQ  LGFSTGIDFVVEATGLFADRDGYSFKKAVAKAPPGEQFKHLIPLMTRGQRWDVVRPRIVQ 16'  MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN 18!  M +D L LSD VV V WA FELT ++YF K+G E +C +C KRAT +++ + Y CW  MFADHLIDLSDCVVLVTWAANFELTCLRYFAKVGREISCNVCTKRATAYNSRTGYYGCWR 22'  HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK 24!  HSV DY+YNP ++D+QQWG+ G+L SNHD +C VH AHVAS DAIMTRCLAV++CF  HSVTCDYLYNPLIVDIQQWGYIGSLSSNHDLYCSVHKGAHVASSDAIMTRCLAVYDCFCN 28'  RVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEW 30!
Score Ident: Query: Sbjct: Query: Sbjct: Query: Sbjct: Query: Query: Sbjct: Query:	108 126 168 186 228 246	Length = 521  517 bits (1590), Expect = e-175  5 = 282/479 (58%), Positives = 365/479 (76%), Gaps = 5/479 (1%)  MTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQ 65  +TY RLIS+MGFK++ ++GY +FIT+EEA++ VRAW+GFD EG HATRD++GTN PLQ  VTYSRLISLMGFKLDVTLDGYCKLFITKEEAVKRVRAWVGFDAEGAHATRDSIGTNFPLQ 10°  LGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQ 12!  LGFSTG++ V TG + F + AK PPG+QFKHLIPLM +G W+VVR +IVQ  LGFSTGIDFVVEATGLFADRDGYSFKKAVAKAPPGEQFKHLIPLMTRGQRWDVVRPRIVQ 16°  MLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWN 18!  M +D L LSD VV V WA FELT ++YF K+G E +C +C KRAT +++ + Y CW  MFADHLIDLSDCVVLVTWAANFELTCLRYFAKVGREISCNVCTKRATAYNSRTGYYGCWR 22°  HSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVK 24!  HSV DY+YNP ++D+QQWG+ G+L SNHD +C VH AHVAS DAIMTRCLAV++CF  HSVTCDYLYNPLIVDIQQWGYIGSLSSNHDLYCSVHKGAHVASSDAIMTRCLAVYDCFCN 28°

Sbjct: 346 KFYDAQPI---VKSVKTLLYSFEAHKDSFKDGLCMFWNCNVDKYPPNAVVCRFDTRVLNN 402 Ouerv: 366 LNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDIDYVPL 425 LNLPGC+GGSLYVNKHAFHT F ++AF +LK +PFFYYSD+PC Sbjct: 403 LNLPGCNGGSLYVNKHAFHTKPFSRAAFEHLKPMPFFYYSDTPCVYMDGMDAKQVDYVPL 462 Ouery: 426 KSATCITRCNLGGAVCRHHANEYROYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTRLQ 484 KSATCITRCNLGGAVC HA EYR+YL++YN +AGF+ W+YK FD YNLWNTFT+LQ Sbjct: 463 KSATCITRCNLGGAVCLKHAEEYREYLESYNTATTAGFTFWVYKTFDFYNLWNTFTKLQ 521 >gi|10242469|ref|NP\_066134.1| ORF1ab polyprotein; frameshift product [Avian infectious bronchitis virusl Length = 6629Score = 575 bits (1482), Expect = e-163Identities = 262/482 (54%), Positives = 344/482 (71%), Gaps = 5/482 (1%) DMTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPL 64 Ouery: 5 ++TY+ LIS++GFKM+ V G NMFITR+EAIR+VR W+GFDVE HA Sbict: 5515 EITYKHLISLLGFKMSVNVEGCHNMFITRDEAIRNVRGWVGFDVEATHACGTNIGTNLPF 5574 OLGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDOFKHLIPLMYKGLPWNVVRIKIV 124 Ouery: 65 Q+GFSTG + V P G VDT F VN+K PPG+QF HL L Sbjct: 5575 OVGFSTGADFVVTPEGLVDTSIGNNFEPVNSKAPPGEQFNHLRVLFKSAKPWHVIRPRIV 5634 Ouery: 125 QMLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACW 184 QML+D L +SD VVFV W HG ELT+++YFVKIG E+ C C RAT F++ + YACW Sbjct: 5635 QMLADNLCNVSDCVVFVTWCHGLELTTLRYFVKIGKEQVCS-CGSRATTFNSHTQAYACW 5693 Ouery: 185 NHSVGFDYVYNPFMIDVOOWGFTGNLOSNHDOHCOVHGNAHVASCDAIMTRCLAVHECFV 244 H +GFD+VYNP ++D+QQWG++GNLQ NHD HC VHG+AHVAS DAIMTRCLA++ F Sbjct: 5694 KHCLGFDFVYNPLLVDIQQWGYSGNLQFNHDLHCNVHGHAHVASVDAIMTRCLAINNAFC 5753 Ouery: 245 KRVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVE 304 + V+W + YP I +E VNS+CR +Q M + + + A K V++DIGNPK IKCV + +V Sbjct: 5754 QDVNWDLTYPHIANEDEVNSSCRYLQRMYLNACVDALKVNVVYDIGNPKGIKCVRRGDVN 5813 Query: 305 WKFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLS 364 + E Y Y H DKF DG+C+FWNCNVD YP N++VCR+DTR LS ++FYD P Sbjct: 5814 FRFYDKNPIVRNVKQFE---YDYNQHKDKFADGLCMFWNCNVDCYPDNSLVCRYDTRNLS 5870 Ouery: 365 NLNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDIDYVP 424 NLPGC+GGSLYVNKHAF+TP FD+ +F NLK +PFF+Y SPCE+ V+ D V Sbjct: 5871 VFNLPGCNGGSLYVNKHAFYTPKFDRISFRNLKAMPFFFYDSSPCETIQVDGVAQ-DLVS 5929 Query: 425 LKSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTRLQ 484 L + CIT+CN+GGAVC+ HA Y +++ +YN ++AGF+ W+ + + YNLW +F+ LQ Sbjct: 5930 LATKDCITKCNIGGAVCKKHAQMYAEFVTSYNAAVTAGFTFWVTNKLNPYNLWKSFSALQ 5989 Query: 485 SL 486

S+

Sbjct: 5990 SI 5991

>gi|14149033|emb|CAC39112.1| replicase polyprotein lab [Avian infectious bronchitis virus (strain

Beaudette CK)]

Length = 6629

Score = 575 bits (1482), Expect = e-163 Identities = 262/482 (54%), Positives = 344/482 (71%), Gaps = 5/482 (1%)

- Query: 5 DMTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPL 64 ++TY+ LIS++GFKM+ V G NMFITR+EAIR+VR W+GFDVE HA +GTNLP
- Sbjct: 5515 EITYKHLISLLGFKMSVNVEGCHNMFITRDEAIRNVRGWVGFDVEATHACGTNIGTNLPF 5574
- Query: 65 QLGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIV 124 O+GFSTG + V P G VDT F VN+K PPG+OF HL L PW+V+R +IV
- Sbjct: 5575 QVGFSTGADFVVTPEGLVDTSIGNNFEPVNSKAPPGEQFNHLRVLFKSAKPWHVIRPRIV 5634
- Query: 125 QMLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACW 184
  OML+D L +SD VVFV W HG ELT+++YFVKIG E+ C C RAT F++ + YACW
- Sbict: 5635 OMLADNLCNVSDCVVFVTWCHGLELTTLRYFVKIGKEQVCS-CGSRATTFNSHTQAYACW 5693
- Query: 185 NHSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFV 244 H +GFD+VYNP ++D+QQWG++GNLQ NHD HC VHG+AHVAS DAIMTRCLA++ F
- Sbjct: 5694 KHCLGFDFVYNPLLVDIQQWGYSGNLQFNHDLHCNVHGHAHVASVDAIMTRCLAINNAFC 5753
- Query: 245 KRVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVE 304 + V+W + YP I +E VNS+CR +Q M + + + A K V++DIGNPK IKCV + +V
- Sbjct: 5754 QDVNWDLTYPHIANEDEVNSSCRYLQRMYLNACVDALKVNVVYDIGNPKGIKCVRRGDVN 5813
- Query: 305 WKFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLS 364 ++FYD P + E Y Y H DKF DG+C+FWNCNVD YP N++VCR+DTR LS
- Sbjct: 5814 FRFYDKNPIVRNVKQFE---YDYNQHKDKFADGLCMFWNCNVDCYPDNSLVCRYDTRNLS 5870
- Query: 365 · NLNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDIDYVP 424 NLPGC+GGSLYVNKHAF+TP FD+ +F NLK +PFF+Y SPCE+ V+ D V
- Sbjct: 5871 VFNLPGCNGGSLYVNKHAFYTPKFDRISFRNLKAMPFFFYDSSPCETIQVDGVAQ-DLVS 5929
- Query: 425 LKSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTRLQ 484 L + CIT+CN+GGAVC+ HA Y +++ +YN ++AGF+ W+ + + YNLW +F+ LQ
- Sbjct: 5930 LATKDCITKCNIGGAVCKKHAQMYAEFVTSYNAAVTAGFTFWVTNKLNPYNLWKSFSALQ 5989

Ouery: 485 SL 486

S+

Sbjct: 5990 SI 5991

>gi|458735|emb|CAA83018.1| potential chimeric protein [Avian infectious bronchitis virus]

Length = 2155

Score = 570 bits (1470), Expect = e-161 Identities = 262/482 (54%), Positives = 344/482 (71%), Gaps = 5/482 (1%)

Query: 5 DMTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPL 64 ++TY+ LIS++GFKM+ V G NMFITR+EAIR+VR W+GFDVE HA +GTNLP

Sbjct: 1596 EITYKHLISLLGFKMSVNVEGCHNMFITRDEAIRNVRGWVGFDVEATHACGTNIGTNLPF 1655

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QLGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIV 124
Query: 65
            Q+GFSTG + V P G VDT F VN+K PPG+QF HL L PW+V+R +IV
Sbjct: 1656 QVGFSTGADFVVTPEGLVDTSIGNNFEPVNSKAPPGEQFNHLRVLFKSAKPWHVIRPRIV 1715
Query: 125 QMLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACW 184
            QML+D L +SD VVFV W HG ELT+++YFVKIG E+ C C RAT F++ + YACW
Sbjct: 1716 QMLADNLCNVSDCVVFVTWCHGLELTTLRYFVKIGKEQVCS-CGSRATTFNSHTQAYACW 1774
Query: 185 NHSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFV 244
             H +GFD+VYNP ++D+QQWG++GNLQ NHD HC VHG+AHVAS DAIMTRCLA++ F
Sbjct: 1775 KHCLGFDFVYNPLLVDIQQWGYSGNLQFNHDLHCNVHGHAHVASVDAIMTRCLAINNAFC 1834
Query: 245 KRVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVE 304
            + V+W + YP I +E VNS+CR +Q M + + + A K V++DIGNPK IKCV + +V
Sbjct: 1835 QDVNWDLTYPHIANEDEVNSSCRYLQRMYLNACVDALKVNVVYDIGNPKGIKCVRRGDVN 1894
Query: 305 WKFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLS 364
            ++FYD P + E Y Y H DKF DG+C+FWNCNVD YP N++VCR+DTR LS
Sbjct: 1895 FRFYDKNPIVRNVKQFE---YDYNQHKDKFADGLCMFWNCNVDCYPDNSLVCRYDTRNLS 1951
Query: 365 NLNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDIDYVP 424
              NLPGC+GGSLYVNKHAF+TP FD+ +F NLK +PFF+Y SPCE+ V+ D V
Sbjct: 1952 VFNLPGCNGGSLYVNKHAFYTPKFDRISFRNLKAMPFFFYDSSPCETIQVDGVAQ-DLVS 2010
Query: 425 LKSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTRLQ 484
            L + CIT+CN+GGAVC+ HA Y +++ +YN ++AGF+ W+ + + YNLW +F+ LQ
Sbjct: 2011 LATKDCITKCNIGGAVCKKHAQMYAEFVTSYNAAVTAGFTFWVTNKLNPYNLWKSFSALQ 2070
Ouerv: 485 SL 486
            S+
Sbjct: 2071 SI 2072
>gi | 133594 | sp | P26314 | RRPB_IBVB RNA-DIRECTED RNA POLYMERASE (ORF1B)
gi|74826|pir||VFIHB2 genome polyprotein - avian infectious bronchitis
virus (strain
            Beaudette)
 gi|292953|gb|AAA70234.1| pol protein [Avian infectious bronchitis virus] gi|331173|gb|AAA46224.1| ORF1b [Avian infectious bronchitis virus]
         Length = 2652
 Score = 570 bits (1469), Expect = e-161
 Identities = 262/482 (54%), Positives = 344/482 (71%), Gaps = 5/482 (1%)
Query: 5
           DMTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPL 64
            ++TY+ LIS++GFKM+ V G NMFITR+EAIR+VR W+GFDVE HA
Sbjct: 1538 EITYKHLISLLGFKMSVNVEGCHNMFITRDEAIRNVRGWVGFDVEATHACGTNIGTNLPF 1597
           QLGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIV 124
Query: 65
            Q+GFSTG + V P G VDT F VN+K PPG+QF HL L PW+V+R +IV
Sbjct: 1598 QVGFSTGADFVVTPEGLVDTSIGNNFEPVNSKAPPGEQFNHLRVLFKSAKPWHVIRPRIV 1657
Query: 125 QMLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACW 184
```

QML+D L +SD VVFV W HG ELT+++YFVKIG E+ C C RAT F++ + YACW

Sbjct: 1658 QMLADNLCNVSDCVVFVTWCHGLELTTLRYFVKIGKEQVCS-CGSRATTFNSHTQAYACW 1716

```
Query: 185 NHSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFV 244
            H +GFD+VYNP ++D+QQWG++GNLQ NHD HC VHG+AHVAS DAIMTRCLA++ F
Sbjct: 1717 KHCLGFDFVYNPLLVDIOOWGYSGNLOFNHDLHCNVHGHAHVASVDAIMTRCLAINNAFC 1776
Query: 245 KRVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVE 304
            + V+W + YP I +E VNS+CR +Q M + + + A K V++DIGNPK IKCV + +V
Sbjct: 1777 QDVNWDLTYPHIANEDEVNSSCRYLQRMYLNACVDALKVNVVYDIGNPKGIKCVRRGDVN 1836
Query: 305 WKFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLS 364
                             Y Y H DKF DG+C+FWNCNVD YP N++VCR+DTR LS
            ++FYD P + E
Sbjct: 1837 FRFYDKNPIVRNVKQFE---YDYNQHKDKFADGLCMFWNCNVDCYPDNSLVCRYDTRNLS 1893
Query: 365 NLNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKOLPFFYYSDSPCESHGKOVVSDIDYVP 424
             NLPGC+GGSLYVNKHAF+TP FD+ +F NLK +PFF+Y SPCE+
Sbjct: 1894 VFNLPGCNGGSLYVNKHAFYTPKFDRISFRNLKAMPFFFYDSSPCETIQVDGVAQ-DLVS 1952
Query: 425 LKSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTRLQ 484
           L + CIT+CN+GGAVC+ HA Y +++ +YN ++AGF+ W+ + + YNLW +F+ LO
Sbjct: 1953 LATKDCITKCNIGGAVCKKHAQMYAEFVTSYNAAVTAGFTFWVTNKLNPYNLWKSFSALO 2012
Query: 485 SL 486
           S+
Sbjct: 2013 SI 2014
>gi|29293454|gb|AAO67706.1| ORF1b polyprotein [Avian infectious bronchitis
virusl
         Length = 2649
 Score = 565 \text{ bits } (1455), Expect = e-160
 Identities = 261/482 (54%), Positives = 342/482 (70%), Gaps = 8/482 (1%)
           DMTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPL 64
Query: 5
           ++TY+ LIS++GFKM+ V G NMFITR+EAIR+VR W+GFDVE HA
Sbjct: 1538 EITYKHLISLLGFKMSVNVEGCHNMFITRDEAIRNVRGWVGFDVEATHACGTNIGTNLPF 1597
Query: 65
           QLGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIV 124
           O+GFSTG + V P G +DT F VN+K PPG+OF HL L PW+V+R +IV
Sbjct: 1598 QVGFSTGADFVVTPEGLIDTSIGNNFEPVNSKAPPGEQFNHLRALFKSAKPWHVIRPRIV 1657
Query: 125 QMLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACW 184
           QML+D L +SD VVFV W HG ELT+++YFVKIG E+ C C RAT F++ + YACW
Sbjct: 1658 QMLADNLCNVSDCVVFVTWCHGLELTTLRYFVKIGKEQVCS-CGSRATTFNSHTQAYACW 1716
Query: 185 NHSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFV 244
                   VYNP ++D+QQWG++GNLQ NHD HC VHG+AHVAS DA+MTRCLA++ F
Sbjct: 1717 RHCLG---VYNPLLVDIQQWGYSGNLQFNHDLHCNVHGHAHVASADAVMTRCLAINNAFC 1773
Query: 245 KRVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPOAEVE 304
           K V+W ++YP I +E VNS+CR +Q M + + + A K V++DIGNPK IKCV + +V
Sbjct: 1774 KDVNWELQYPHIANEDEVNSSCRYLQRMYLNACVDALKVNVVYDIGNPKGIKCVRRGDVN 1833
Query: 305 WKFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLS 364
           ++FYD P
                        + E Y Y+ H DKF DG+C+FWNCNVD YP N++VCR+DTR LS
Sbjct: 1834 FRFYDKNPIVPNVKQFE---YDYSQHKDKFADGLCMFWNCNVDCYPENSLVCRYDTRNLS 1890
```

Query: 365 NLNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDIDYVP 424 NLPGC+GGSLYVNKHAFHTP FD+ +F NLK +PFF+Y SPCE+ V+ D V Sbjct: 1891 VFNLPGCNGGSLYVNKHAFHTPKFDRISFRNLKAMPFFFYDSSPCETIQVDGVAQ-DLVS 1949 Query: 425 LKSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTRLQ 484 L + CIT+CN+GGAVC+ HA Y +++ +YN ++AGF+ W+ F+ YNLW F+ LQ Sbict: 1950 LATKDCITKCNIGGAVCKKHAOMYAEFVFSYNAAVTAGFTFWVTNNFNPYNLWKNFSALO 2009 Ouery: 485 SL 486 S+ Sbjct: 2010 SI 2011 >gi|25121555|ref|NP\_740631.1| coronavirus nsp11 [Avian infectious bronchitis virus] Length = 521Score = 559 bits (1440), Expect = e-158 Identities = 261/480 (54%), Positives = 342/480 (71%), Gaps = 5/480 (1%) Query: 5 DMTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPL 64 ++TY+ LIS++GFKM+ V G NMFITR+EAIR+VR W+GFDVE HA Sbjct: 47 EITYKHLISLLGFKMSVNVEGCHNMFITRDEAIRNVRGWVGFDVEATHACGTNIGTNLPF 106 Query: 65 QLGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIV 124 Q+GFSTG + V P G VDT F VN+K PPG+QF HL L PW+V+R +IV Sbjct: 107 QVGFSTGADFVVTPEGLVDTSIGNNFEPVNSKAPPGEQFNHLRVLFKSAKPWHVIRPRIV 166 Ouery: 125 OMLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACW 184 QML+D L +SD VVFV W HG ELT+++YFVKIG E+ C C RAT F++ + YACW Sbjct: 167 QMLADNLCNVSDCVVFVTWCHGLELTTLRYFVKIGKEQVCS-CGSRATTFNSHTQAYACW 225 Ouery: 185 NHSVGFDYVYNPFMIDVQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFV 244 H +GFD+VYNP ++D+QOWG++GNLO NHD HC VHG+AHVAS DAIMTRCLA++ F Sbjct: 226 KHCLGFDFVYNPLLVDIQQWGYSGNLQFNHDLHCNVHGHAHVASVDAIMTRCLAINNAFC 285 Ouery: 245 KRVDWSVEYPIIGDELRVNSACRKVOHMVVKSALLADKFPVLHDIGNPKAIKCVPOAEVE 304 + V+W + YP I +E VNS+CR +Q M + + + A K V++DIGNPK IKCV + +V Sbjct: 286 QDVNWDLTYPHIANEDEVNSSCRYLQRMYLNACVDALKVNVVYDIGNPKGIKCVRRGDVN 345 Query: 305 WKFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLS 364, + E Y Y H DKF DG+C+FWNCNVD YP N++VCR+DTR LS ++FYD P Sbjct: 346 FRFYDKNPIVRNVKQFE---YDYNQHKDKFADGLCMFWNCNVDCYPDNSLVCRYDTRNLS 402 Query: 365 NLNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDIDYVP 424 NLPGC+GGSLYVNKHAF+TP FD+ +F NLK +PFF+Y SPCE+ V+ D V Sbjct: 403 VFNLPGCNGGSLYVNKHAFYTPKFDRISFRNLKAMPFFFYDSSPCETIQVDGVAQ-DLVS 461 Query: 425 LKSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTRLQ 484 L + CIT+CN+GGAVC+ HA Y +++ +YN ++AGF+ W+ + + YNLW +F+ LQ Sbjct: 462 LATKDCITKCNIGGAVCKKHAQMYAEFVTSYNAAVTAGFTFWVTNKLNPYNLWKSFSALQ 521 >gi|9635157|ref|NP\_058422.1| replicase [Transmissible gastroenteritis

virus]
gi|7801348|emb|CAB91143.1| replicase [Transmissible gastroenteritis virus]

Length = 6685

Score = 545 bits (1403), Expect = e-153
Identities = 261/484 (53%), Positives = 335/484 (69%), Gaps = 13/484 (2%)

Query: 4 KDMTYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLP 63
KD+ Y +IS MGF+ + GY +F TR+ A+R+VRAW+GFDVEG H D VGTN+P

Sbjct: 5574 KDVKYANVISYMGFRFEANIPGYHTLFCTRDFAMRNVRAWLGFDVEGAHVCGDNVGTNVP 5633

Query: 64 LQLGFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKI 123 LQLGFS GV+ V G V TE V A+ PPG+QF HLIPLM KG PW++VR +I

Sbjct: 5634 LQLGFSNGVDFVVQTEGCVITEKGNSIEVVKARAPPGEQFAHLIPLMRKGQPWHIVRRRI 5693

Query: 124 VQMLSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIG-PERTCCLCDKRATCFSTSSDTYA 182 VQM+ D GLSD ++FVLWA G ELT+M+YFVKIG P++ C C K ATC+S+S YA

Sbjct: 5694 VQMVCDYFDGLSDILIFVLWAGGLELTTMRYFVKIGRPQK--CECGKSATCYSSSQSVYA 5751

Query: 183 CWNHSVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHEC 242 C+ H++G DY+YNP+ ID+QQWG+TG+L NH + C +H N HVAS DAIMTRCLA+H+C

Sbjct: 5752 CFKHALGCDYLYNPYCIDIQQWGYTGSLSMNHHEVCNIHRNEHVASGDAIMTRCLAIHDC 5811

Query: 243 FVKRVDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAE 302 FVKRVDWS+ YP I +E ++N A R VQ V+K+AL +HD+GNPK I+C

Sbjct: 5812 FVKRVDWSIVYPFIDNEEKINKAGRIVQSHVMKAALKIFNPAAIHDVGNPKGIRCA-TTP 5870

Query: 303 VEWKFYDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRV 362 + W YD P ++ + L Y Y +H +G+ LFWNCNVD YP +IVCRFDTR

Sbjct: 5871 IPWFCYDRDPINN---NVRCLDYDYMVHGQ--MNGLMLFWNCNVDMYPEFSIVCRFDTRT 5925

Query: 363 LSNLNLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDIDY 422 S L+L GC+GG+LYVN HAFHTPA+D+ AF LK +PFFYY DS CE V +Y

Sbjct: 5926 RSKLSLEGCNGGALYVNNHAFHTPAYDRRAFAKLKPMPFFYYDDSNCE----LVDGQPNY 5981

Query: 423 VPLKSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTR 482 VPLKS CIT+CN+GGAVC+ HA YR Y++ YN+ + AGF++W + FDTY LW+ F

Sbjct: 5982 VPLKSNVCITKCNIGGAVCKKHAALYRAYVEDYNIFMQAGFTIWCPQNFDTYMLWHGFVN 6041

Query: 483 LQSL 486

++L

Sbjct: 6042 SKAL 6045

>gi|19387582|ref|NP\_598309.1| Pol1 [porcine epidemic diarrhea virus] gi|13752450|gb|AAK38661.1| Pol1 [porcine epidemic diarrhea virus] Length = 6781

Score = 541 bits (1394), Expect = e-152 Identities = 256/480 (53%), Positives = 334/480 (69%), Gaps = 12/480 (2%)

Query: 8 YRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQLG 67
Y +IS MGF+ + + + +F TR+ A+R+VR W+GFDVEG H VGTN+PLQLG

 ${\tt Sbjct:}~5675~{\tt YEHVISFMGFRFDINIPNHHTLFCTRDFAMRNVRGWLGFDVEGAHVVGSNVGTNVPLQLG}~5734$ 

Query: 68 FSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQML 127 FS GV+ V P G V TE+ V A+ PPG+QF HL+PL+ +G PW+VVR +IVQM

Sbjct: 5735 FSNGVDFVVRPEGCVVTESGDYIKPVRARAPPGEOFAHLLPLLKRGOPWDVVRKRIVOMC 5794

	Query:	128	SDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWNHS SD L LSD ++FVLWA G ELT+M+YFVKIGP ++C C K ATC++++ TY C+ H+	187
	Sbjct:	5795	SDYLANLSDILIFVLWAGGLELTTMRYFVKIGPSKSCD-CGKVATCYNSALHTYCCFKHA	5853
	Query:	188	VGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVKRV +G DY+YNP+ ID+QQWG+ G+L NH +HC VH N HVAS DAIMTRCLA+H+CFVK V	247
	Sbjct:	5854	LGCDYLYNPYCIDIQQWGYKGSLSLNHHEHCNVHRNEHVASGDAIMTRCLAIHDCFVKNV	5913
	Query:	248	DWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEWKF	307
	Sbjct:	5914	DWS+ YP IG+E +N + R VQ ++S L ++DIGNPK I+C + +W DWSITYPFIGNEAVINKSGRIVQSHTMRSVLKLYNPKAIYDIGNPKGIRCA-VTDAKWFC	5972
	Query:	308	YDAQPCSDKAYKIEELFYSYAIHHDKFTDGVCLFWNCNVDRYPANAIVCRFDTRVLSNLN	367
	Sbjct:	5973	+D P + +E Y Y I H +F DG+CLFWNCNVD YP ++VCRFDTR S LN FDKNPTNSNVKTLEYDY-ITHGQF-DGLCLFWNCNVDMYPEFSVVCRFDTRCRSPLN	6027
	Query:	368	LPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSDIDYVPLKS	427
	Sbjct:	6028	L GC+GGSLYVN HAFHTPAFDK AF LK +PFF+Y D+ C+ ++ I+YVPL++ LEGCNGGSLYVNNHAFHTPAFDKRAFAKLKPMPFFFYDDTECDKLQDSINYVPLRA	6083
	Query:	428	ATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNTFT-RLQSL	486
	Sbjct:	6084	$+ \  \  CIT+CN+GGAVC \  \   H  Y  Y++AYN  SAGF++W+  FDTYNLW \   TF+  LQ \   L \\ SNCITKCNVGGAVCSKHCAMYHSYVNAYNTFTSAGFTIWVPTSFDTYNLWQTFSNNLQGL$	6143
	229E]	)8274( virus	7   ref   NP = 073549.1   replicase polyprotein lab [Human coronaviorable] replicase polyprotein lab [Human 229E]:  ength = 6758	LIUS
Score = 535 bits (1379), Expect = e-151 Identities = 254/478 (53%), Positives = 329/478 (68%), Gaps = 13/478 (2%)				
	Query:	7	TYRRLISMMGFKMNYQVNGYPNMFITREEAIRHVRAWIGFDVEGCHATRDAVGTNLPLQL	66
	Sbjct:	5642	TY +IS MGF+ + + G ++F TR+ A+RHVR W+G DVEG H T D VGTN+PLQ+ TYEHVISYMGFRFDVSMPGSHSLFCTRDFAMRHVRGWLGMDVEGAHVTGDNVGTNVPLQV	5701
	Query:		GFSTGVNLVAVPTGYVDTENNTEFTRVNAKPPPGDQFKHLIPLMYKGLPWNVVRIKIVQM	126
	Sbjct:		GFS GV+ VA P G V T + V A+ PPG+QF H++PL+ KG PW+V+R +IVQM GFSNGVDFVAQPEGCVLTNTGSVVKPVRARAPPGEQFTHIVPLLRKGQPWSVLRKRIVQM	5761
	Query:	127	LSDTLKGLSDRVVFVLWAHGFELTSMKYFVKIGPERTCCLCDKRATCFSTSSDTYACWNH	186
	Sbjct:	5762	++D L G SD +VFVLWA G ELT+M+YFVKIG + C C ATC+++ S+ Y C+ H IADFLAGSSDVLVFVLWAGGLELTTMRYFVKIGAVKH-CQCGTVATCYNSVSNDYCCFKH	5820
	Query:	187	SVGFDYVYNPFMIDVQQWGFTGNLQSNHDQHCQVHGNAHVASCDAIMTRCLAVHECFVKR	246
	Sbjct:	5821	++G DYVYNP++ID+QQWG+ G+L +NH C VH N HVAS DAIMTRCLAV++CFVK ALGCDYVYNPYVIDIQQWGYVGSLSTNHHAICNVHRNEHVASGDAIMTRCLAVYDCFVKN	5880
	Query:	247	VDWSVEYPIIGDELRVNSACRKVQHMVVKSALLADKFPVLHDIGNPKAIKCVPQAEVEWK	306
	Sbjct:	5881	VDWS+ YP+I +E +N R VQ ++++A+ +HDIGNPK I+C + +W VDWSITYPMIANENAINKGGRTVQSHIMRAAIKLYNPKAIHDIGNPKGIRCA-VTDAKWY	5939
			VDWS+ YP+I +E +N R VQ ++++A+ +HDIGNPK I+C + +W	

+E YYH YD P + DG+CLFWNCNVD YP +IVCRFDTR S L Sbjct: 5940 CYDKNPINSNVKTLE---YDYMTHGQ--MDGLCLFWNCNVDMYPEFSIVCRFDTRTRSTL 5994 Ouery: 367 NLPGCDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSDSPCESHGKQVVSD-IDYVPL 425 NL G +GGSLYVN HAFHTPA+DK A LK PFFYY D CE VV D ++YVPL Sbjct: 5995 NLEGVNGGSLYVNNHAFHTPAYDKRAMAKLKPAPFFYYDDGSCE-----VVHDQVNYVPL 6049 Ouery: 426 KSATCITRCNLGGAVCRHHANEYRQYLDAYNMMISAGFSLWIYKQFDTYNLWNTFTRL 483 ++ CIT+CN+GGAVC HAN YR Y+++YN+ AGF++W+ FD YNLW TFT + Sbjct: 6050 RATNCITKCNIGGAVCSKHANLYRAYVESYNIFTQAGFNIWVPTTFDCYNLWQTFTEV 6107 >qi|133591|sp|P18458|RRPB\_BEV RNA-directed RNA polymerase (ORF1B) qi|94017|pir||S11238 polymerase - Berne virus gi | 1334814 | emb | CAA36601.1 | 2nd polymerase reading frame (AA 1-2291) [Berne virus] Length = 2291Score = 50.1 bits (118), Expect = 8e-05 Identities = 37/103 (35%), Positives = 54/103 (52%), Gaps = 11/103 (10%) Ouery: 140 FVLWAHGFELTSMKYFVKIGPERTC--CLCDKRATCFSTSSDTYACWNHSVGF--DYVYN 195 +L S+K++V+ TC C C + A C + Y C N G F+L++Sbjct: 1511 FILYSCSNDLKSLKFYVEFD---TCYFCSCGEMAICLMRDGN-YKCRNCYGGMLISKLVN 1566 Ouery: 196 PFMIDVQQWGFTGNLQSNHDQHC-QVHGNAHVASCDAIMTRCL 237 +DVQ+ LO HD C O HG++H A CDA+MT+CL Sbjct: 1567 CKYLDVOKERV--KLQDAHDAICQQFHGDSHEALCDAVMTKCL 1607 >qi|1513061|dbj|BAA13323.1| cyanoprotein alpha subunit precursor [Riptortus clavatusl Length = 693Score = 34.7 bits (78), Expect = 3.7Identities = 16/36 (44%), Positives = 22/36 (61%), Gaps = 1/36 (2%) Ouery: 371 CDGGSLYVNKHAFHTPAFDKSAFTNLKQLPFFYYSD 406 C G LY +KHA P FD+ A+ + Q+P FY+ D Sbjct: 643 CGGSKLYDSKHAMGFP-FDRPAYPDAFQVPNFYFKD 677 Database: All non-redundant GenBank CDS translations+PDB+SwissProt+PIR+PRF Posted date: Apr 11, 2003 2:30 AM Number of letters in database: 454,141,287 Number of sequences in database: 1,411,415 Lambda 0.325 0.139 0.456

Gapped Lambda

0.267

K H 0.0410

0.140

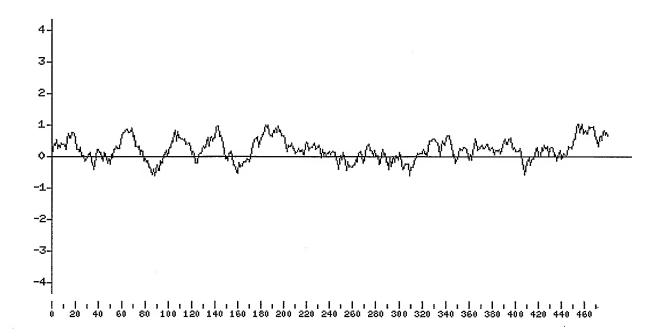
## WO 2004/092360 PCT/US2004/011710

#### 176/193

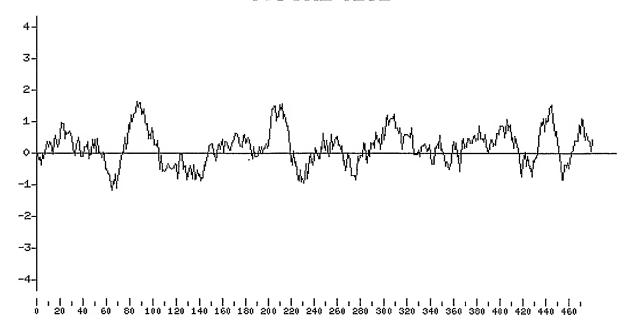
```
Matrix: BLOSUM62
Gap Penalties: Existence: 11, Extension: 1
Number of Hits to DB: 473,361,261
Number of Sequences: 1411415
Number of extensions: 20503315
Number of successful extensions: 51018
Number of sequences better than 10.0: 27
Number of HSP's better than 10.0 without gapping: 26
Number of HSP's successfully gapped in prelim test: 1
Number of HSP's that attempted gapping in prelim test: 50937
Number of HSP's gapped (non-prelim): 33
length of query: 486
length of database: 454,141,287
effective HSP length: 127
effective length of query: 359
effective length of database: 274,891,582
effective search space: 98686077938
effective search space used: 98686077938
T: 11
A: 40
X1: 15 ( 7.0 bits)
X2: 38 (14.6 bits)
X3: 64 (24.7 bits)
S1: 40 (21.6 bits)
S2: 75 (33.5 bits)
```

# FIGURE 125

# FIGURE 125A



# FIGURE 125B



#### FIGURE 126

## 5'3' Frame 1

QVHQNVCVL-LIFYLMTLSR--SHKICQ-FQKWSRLQLTMLKFHSCFGVRMDMLKPSTQN YKQVKRGNQVLRCLTCTRCKECFLKSVTFRIMVKMLLYQKE---MSQSILNCVNT-IHLL -LYPPT-ELFTLVL

#### 5'3' Frame 2

RFIKMCVFCD-SFT--LCRDNKVTRFVSDFKSGQGYN-LC-NFIHALV-GWTC-NLLPKT TSKSSVATRCCDA-LVQDAKNAS-KV-PSELW-KCCYTKRNNDECRKVYSTVSILKYTYF SCTLOHESYSLWCW

## 5'3' Frame 3

GSSKCVCSVIDLLLDDFVEIIKSQDLSVISKVVKVTIDYAEISFMLWCKDGHVETFYPKL QASQAWQPGVAMPNLYKMQRMLLEKCDLQNYGENAVIPKGIMMNVAKYTQLCQYLNTLTL AVPSNMRVIHFGAG

#### 3'5' Frame 1

PAPK-ITLMLEGTAKVSVFKY-HS-VYFATFIIIPFGITAFSP-F-RSHFSRSILCILYK LGIATPGCHA-LACSFG-KVSTCPSLHQSMNEISA-SIVTLTTFEITDKSCDFIISTKSS SKRSITEHTHFDEP

## 3'5' Frame 2

QHQSE-LSCWRVQLK-VYLSIDTVEYTLRHSSLFLLV-QHFHHNSEGHTFQEAFFASCTS -ASQHLVATLDLLVVLGRRFQHVHPYTKA-MKFQHSQL-P-PLLKSLTNLVTLLSRQSHQ VKDQSQNTHILMNL

## 3'5' Frame 3

STKVNNSHVGGYS-SKCI-VLTQLSILCDIHHYSFWYNSIFTIILKVTLFKKHSLHLVQV RHRNTWLPRLTCL-FWVEGFNMSILTPKHE-NFSIVNCNLDHF-NH-QIL-LYYLDKVIK -KINHRTHTF-T

#### FIGURE 127

## 5'3' Frame 1

-VFTYPGKANQPRSLVDLFSKRTN-NV--WTPIKPT-CPPHYIWWTHRFN-Q-PEWRTAM GQGQNSADPKVYPIILRLGSQLSLSMARRNLDSLEARAFQSTPIVVQMTKLATTEELPDE FVVVTAK-KSSAPDGTSIT-ELAQKLHFPTALTKKASYGLQLREP-IHPKTTLAPAILIT MLPPCYNFLKEQHCQKASTQREAEAAVKPLLAPHHVVAVIQEIQLLAAVGEILLLEWLAE VVKLPSRYCC-TD-TSLRAKFLVKANNNKAKLSLRNLLLRHLKSLAKNVLPQNSTTSLKH LGDVVQNKPKEISGTKT-SDKELITNIGPQIAQFA

#### 5'3' Frame 2

RFLPTQEKPTNLDLL-ICSLNEQIKMSDNGPQSNQRSAPRITFGGPTDSTDNNQNGGLQWGKAKTAPTPRFTQ-YCVLVHSSHSAWQGGT-IPSRPGRSNQHQ-WSR-PNWLLPKSYPTSSWW-RQNERAQPQMVLLLPRNWPRSFTSLRR-QRRHRMGCN-GSLEYTQRPHWHPQS--QCHRATTSSRNNIAKRLLRRGKQRRQSSLFSLLIT-SR-FKKFNSWQQ-GKFSCSNG-RRW-NCPRAIAARQIEPA-EQSFW-RPTTTRPNCH-EICC-GI-KASPKTYCHKTVQRHSSIWETWSRTNPRKFRGPRPNQTRN-LQTLGRKLHNLP

#### 5'3' Frame 3

GFYLPRKSQPTSISCRSVL-TNKLKCLIMDPNQTNVVPPALHLVDPQIQLTITRMEDCNG ARPKQRRPQGLPNNIASWFTALTQHGKEELRFPRGQGVPINTNSGPDDQIGYYRRATRRV RGGDGKMKELSPRWYFYYLGTGPEASLPYGANKEGIVWVATEGALNTPKDHIGTRNPNNN AATVLQLPQGTTLPKGFYAEGSRGGSQASSRSSSRSRGNSRNSTPGSSRGNSPARMASGG GETALALLLLDRLNQLESKVSGKGQQQQGQTVTKKSAAEASKKPRQKRTATKQYNVTQAF GRRGPEQTQGNFGDQDLIRQGTDYKHWAANCTIC

## 3'5' Frame 1

RQIVQFAAQCL-SVPCLIRSWSPKFPWVCSGPRLPNA-VTLYCFVAVRFWRGFLDASAAD FLVTVWPCCCWPLPETLLSSWFNLSSSNSARAVSPPPLAIRAGEFPLLLPGVEFLELPRL RDEEREEA-LPPLLPSA-KPFGNVVP-GSCSTVAALLLGLRVPMWSLGVFKAPSVATHTM PSLLAP-GSEASGPVPR--KYHLGLSSFILPSPPRTRRVALR--PIWSSGPLLVLIGTPW PRGNLSSSLPC-VRAVNQDAILLGKPWGRRCFGLAPLQSSILVIVS-ICGSTKCNAGGTT LV-LGSIIRHFNLFV-RTDLQEIEVGWLFLGR-KP

#### 3'5' Frame 2

GKLCNLRPNVCNOFLV-LGLGPRNFLGFVLDHVSQMLE-RCTVLWQYVFGEAF-MPQQQI

S--QFGLVVVGLYQKLCSQAGSICLAAIARGQFHHLR-PFEQENFPYCCQELNFLNYRDY VMRSEKRLDCRLCFPLRRSLLAMLFLEEVVARWQHCY-DCGCQCGLWVYSRLPQLQPIRC LLC-RRREVKLLGQFLGNRSTIWG-ALSFCRHHHELVG-LFGSSQFGHLDHYWC-LERPG LEGI-VPPCHAE-EL-TKTQYYWVNLGVGAVLALPHCSPPFWLLSVESVGPPNVMRGALR WFDWGPLSDILICSFREQIYKRSRLVGFSWVGKNL

## 3'5' Frame 3

ANCAICGPMFVISSLSD-VLVPEISLGLFWTTSPKCLSDVVLFCGSTFLARLFRCLSSRF LSDSLALLLLAFTRNFALKLVQSV-QQ-REGSFTTSASHSSRRISPTAARS-IS-ITATT --GARRGLTAASASLCVEAFWQCCSLRKL-HGGSIVIRIAGANVVFGCIQGSLSCNPYDA FFVSAVGK-SFWASS-VIEVPSGAELFHFAVTTTNSSGSSSVVANLVIWTTIGVDWNALA SRESKFLLAMLSESCEPRRNIIG-TLGSALFWPCPIAVLHSGYCQLNLWVHQM-CGGHYV GLIGVHYQTF-FVRLENRSTRDRGWLAFPG-VKT

## FIGURE 128

-GLELKL-LTSICAF-PFCYSLF--CLLYFGFHSKSRI-KNLVPKSKRT-NFSLF-LVFL
YAVAYAL-YSAVHLINLMCLKILVRYNTRGNTYSTAWLCALGKVLPFHRWHTMVQTCTPN
VTINCQDPAGGALIARCWYLHEGHQTAAFRDVLVVLNKRTN-NV--WTPIKPT-CPPHYI
WWTHRFN-Q-PEWRTQWGKAKTAPTPRFTQ-YCVLVHSSHSAWQGGT-IPSRPGRSNQHQ
-WSR-PNWLLPKSYPTSSWW-RQNERAQPQMVLLLPRNWPRSFTSLRR-QRRHRMGCN-G
SLEYTQRPHWHPQS--QCCHRATTSSRNNIAKRLLRRGKQRRQSSLFSLLIT-SR-FKKF
NSWQQ-GKFSCSNG-RRW-NCPRAIAARQIEPA-EQSFW-RPTTTRPNCH-EICC-GI-K
ASPKTYCHKTVQRHSSIWETWSRTNPRKFRGPRPNQTRN-LQTLAANCTICSKCLCILWN
VTHWHGSHTFGNMADLSWSH-IG-QRSTIQRQRHTAEQAH-RIQNIPTNRA-KGQKEKD--SSAFAAETKEAAHCDSSSC

EDSSSSFN-LLFVLFSLSAIPCFNNAYYILVFTRNPGSRRTLYQSLNEHETSHCFDLYFS
MQLHMHCSTALCI--TSCA-RSL-GTTLGVILIALLGFVL-ERFYLFIDGTLWFKHAHLM
LLSTVKIQLVVRL-LGVGTFMKVTKLLHLETYLLF-INEQIKMSDNGPQSNQRSAPRITF
GGPTDSTDNNQNGGRNGARPKQRRPQGLPNNIASWFTALTQHGKEELRFPRGQGVPINTN
SGPDDQIGYYRRATRRVRGGDGKMKELSPRWYFYYLGTGPEASLPYGANKEGIVWVATEG
ALNTPKDHIGTRNPNNNAATVLQLPQGTTLPKGFYAEGSRGGSQASSRSSSRSRGNSRNS
TPGSSRGNSPARMASGGGETALALLLLDRLNQLESKVSGKGQQQQGQTVTKKSAAEASKK
PRQKRTATKQYNVTQAFGRRGPEQTQGNFGDQDLIRQGTDYKHWPQIAQFAPSASAFFGM
SRIGMEVTPSGTWLTYHGAIKLDDKDPQFKDNVILLNKHIDAYKTFPPTEPKKDKKKKTD
EAQPLPQRQKKQPTVTLLP

RTRAQALIDFYLCFLAFLLFLVLIMLIIFWFSLEIQDLEEPCTKV-TNMKLLIVLTCISL CSCICTVVQRCASNKPHVLEDPCKVQH-G-YL-HCLALCSRKGFTFS-MAHYGSNMHT-C YYQLSRSSWWCAYS-VLVPS-RSPNCCI-RRTCCFK-TNKLKCLIMDPNQTNVVPPALHL VDPQIQLTITRMEDAMGQGQNSADPKVYPIILRLGSQLSLSMARRNLDSLEARAFQSTPI VVQMTKLATTEELPDEFVVVTAK-KSSAPDGTSIT-ELAQKLHFPTALTKKASYGLQLRE P-IHPKTTLAPAILITMLPPCYNFLKEQHCQKASTQREAEAAVKPLLAPHHVVAVIQEIQ LLAAVGEILLLEWLAEVVKLPSRYCC-TD-TSLRAKFLVKANNNKAKLSLRNLLLRHLKS LAKNVLPQNSTTSLKHLGDVVQNKPKEISGTKT-SDKELITNIGRKLHNLLQVPLHSLEC HALAWKSHLREHG-LIMEPLNWMTKIHNSKTTSYC-TSTLTHTKHSHQQSLKRTKRKRLM KLSLCRRDKRSSPL-LFFL

## FIGURE 129

## 5'3' Frame 1

## 5'3' Frame 2

## 5'3' Frame 3

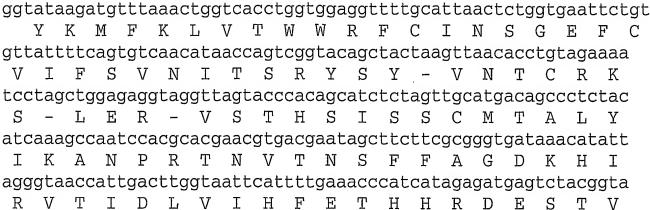
### 3'5' Frame 1

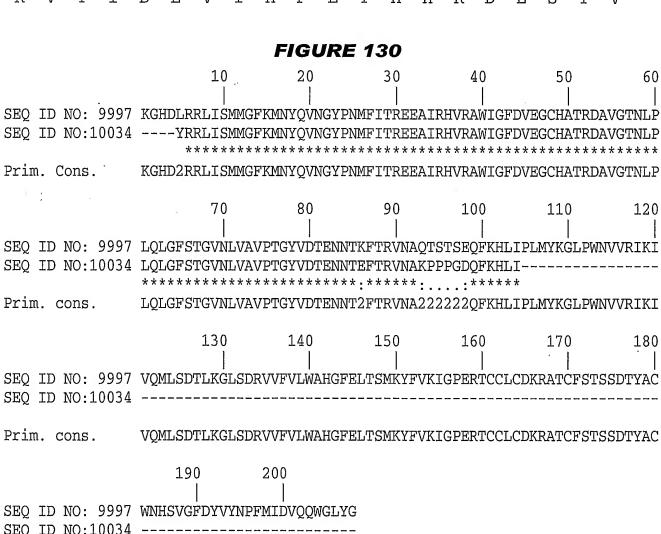
ggtataagatgtttaaactggtcacctggtggaggttttgcattaactctggtgaattct G I R C L N W S P G G G F A L T L V N S gtgttattttcagtgtcaacataaccagtcggtacagctactaagttaacacctgtagaa V L F S V S T - P V G T A T K L T P V E aatcctagctggagaggtaggttagtacccacagcatctctagttgcatgacagccctct N P S W R G R L V P T A S L V A - Q P S acatcaaagccaatccacgcacgaacgtgacgaatagcttcttcgcgggtgataaacata T S K P I H A R T - R I A S S R V I N I ttagggtaaccattgacttggtaattcattttgaaacccatcatagagatgagtctacggta L G - P L T W - F I L K P I I E M S L R

## 3'5' Frame 2

ggtataagatgtttaaactggtcacctggtggaggttttgcattaactctggtgaattctg V - D V - T G H L V E V L H - L W - I L tgttattttcagtgtcaacataaccagtcggtacagctactaagttaacacctgtagaaa C Y F Q C Q H N Q S V Q L L S - H L - K atcctagctggagaggtaggttagtacccacagcatctctagttgcatgacagccctcta I L A G E V G - Y P Q H L - L H D S P L catcaaagccaatccacgcacgaacgtgacgaatagcttcttcgcgggtgataaacatat H Q S Q S T H E R D E - L L R G - - T Y tagggtaaccattgacttggtaattcattttgaaacccatcatagagatgagtctacggta - G N H - L G N S F - N P S - R - V Y G

## 3'5' Frame 3





### FIGURE 131

#### 5'3' Frame 1

#### 5'3' Frame 2

#### 5'3' Frame 3

caggttcatcaaaatgtgtgtgttctgtgattgatcttttacttgatgactttgtcgagata G S S K C V C S V I D L L L D D F V E I ataaagtcacaagatttgtcagtgatttcaaaagtggtcaaggttacaattgactatgct I K S Q D L S V I S K V V K V T I D Y A gaaatttcattcatgctttggtgtaaggatggacatgttgaaaccttctacccaaaacta E I S F M L W C K D G H V E T F Y P K L caagcaagtcaagcgtggcaaccaggtgttgcgatgcctaacttgtacaagatgcaaaga

#### 3'5' Frame 1

#### 3'5' Frame 2

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# FIGURE 132

#### 5'3' Frame 1

taggtttttacctacccaggaaaagccaaccaacctcgatctcttgtagatctgttctct - V F T Y P G K A N O P R S L V D L F S aaacqaacaaattaaaatgtctgataatggaccccaatcaaaccaacgtagtgccccccg KRTN-NV--WTPIKPT-CPP cattacatttggtggacccacagattcaactgacaataaccagaatggaggactgcaatg H Y I W W T H R F N - Q - P E W R T A M gggcaaggccaaaacagcgccgaccccaaggtttacccaataatattgcgtcttggttca G Q G Q N S A D P K V Y P I I L R L G S cagctctcactcagcatggcaaggaggaacttagattccctcgaggccagggcgttccaa Q L S L S M A R R N L D S L E A R A F O tcaacaccaatagtggtccagatgaccaaattggctactaccgaagagctacccgacgag S T P I V V Q M T K L A T T E E L P D E ttcgtggtggtgacggcaaaatgaaagagctcagccccagatggtacttctattacctag F V V V T A K - K S S A P D G T S I T gaactggcccagaagcttcacttccctacggcgctaacaaagaaggcatcgtatgggttg ELAQKLHFPTALTKKASYGL caactgagggagccttgaatacacccaaagaccacattggcacccgcaatcctaataaca Q L R E P - I H P K T T L A P A I L I T atgctgccaccgtgctacaacttcctcaaggaacaacattgccaaaaggcttctacgcag M L P P C Y N F L K E Q H C Q K A S T Q agggaagcagaggcggcagtcaagcctcttctcgctcctcatcacgtagtcgcggtaatt R E A E A A V K P L L A P H H V V A V I caagaaattcaactcctggcagcagtaggggaaattctcctgctcgaatggctagcggag Q E I Q L L A A V G E I L L E W L A E

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gtggtgaaactgccctcgcgctattgctgctagacagattgaaccagcttgagagcaaag V V K L P S R Y C C - T D - T S L R A K tttctggtaaaggccaacaacaacaaggccaaactgtcactaagaaatctgctgctgagg F L V K A N N N K A K L S L R N L L L R catctaaaaaggcctcgccaaaaacgtactgccacaaaacagtacaacgtcactcaagcat H L K S L A K N V L P Q N S T T S L K H ttgggagacgtggtccagaacaaacccaaggaaatttcggggaccaagacctaatcagac L G D V V Q N K P K E I S G T K T - S D aaggaactgattacaaacattgggccgcaaattgcacaatttgcct K E L I T N I G P O I A O F A

#### 5'3' Frame 2

taggtttttacctacccaggaaaagccaacctactctgttgtagatctgttctcta R F L P T Q E K P T N L D L L - I C S L aacgaacaaattaaaatgtctgataatggaccccaatcaaaccaacgtagtgccccccgc N E Q I K M S D N G P Q S N Q R S A P R attacatttggtggacccacagattcaactgacaataaccagaatggaggactgcaatgg I T F G G P T D S T D N N Q N G G L Q W ggcaaggccaaaacagcgccgaccccaaggtttacccaataatattgcgtcttggttcac G K A K T A P T P R F T O - Y C V L V H agctctcactcagcatggcaaggaggaacttagattccctcgaggccagggcgttccaat S S H S A W O G G T - I P S R P G R S N -caacaccaatagtggtccagatgaccaaattggctactaccgaagagctacccgacgagt Q H Q - W S R - P N W L L P K S Y P T S tcgtggtggtgacggcaaaatgaaagagctcagcccagatggtacttctattacctagg S W W - R Q N E R A Q P Q M V L L L P R aactggcccagaagcttcacttccctacggcqctaacaaagaaggcatcgtatqggttgc NWPRSFTSLRR-QRRHRMGC aactgagggagccttgaatacacccaaagaccacattggcacccgcaatcctaataacaa N - G S L E Y T Q R P H W H P Q S - - Q tgctgccaccgtgctacaacttcctcaaggaacaacattgccaaaaggcttctacgcaga C C H R A T T S S R N N I A K R L L R R gggaagcagaggcggcagtcaagcctcttctcgctcctcatcacgtagtcgcggtaattc GKQRRQSSLFSLLIT-SR-F aagaaattcaactcctggcagcagtaggggaaattctcctgctcgaatggctagcggagg KKFNSWQQ-GKFSCSNG-RR tggtgaaactgccctcgcgctattgctgctagacagattgaaccagcttgagagcaaagt W - N C P R A I A A R Q I E P A - E Q S ttctggtaaaggccaacaacaacaaggccaaactgtcactaagaaatctgctgctgaggc FW-RPTTTRPNCH-EICC-G atctaaaaagcctcgccaaaaacgtactgccacaaaacagtacaacgtcactcaagcatt I - K A S P K T Y C H K T V Q R H S S I tgggagacgtggtccagaacaaacccaaggaaatttcggggaccaagacctaatcagaca W E T W S R T N P R K F R G P R P N O T aggaactgattacaaacattgggccgcaaattgcacaatttgcct RN-LQTLGRKLHNLP

#### 5'3' Frame 3

taggtttttacctacccaggaaaagccaaccaacctcgatctcttgtagatctgttctctaa G F Y L P R K S O P T S I S C R S V L acgaacaaattaaaatgtctgataatggaccccaatcaaaccaacgtagtgccccccgca T N K L K C L I M D P N Q T N V V P P A ttacatttggtggacccacagattcaactgacaataaccagaatggaggactgcaatggg LHLVDPQIQLTITRMEDCNG gcaaggccaaaacagcgccgaccccaaggtttacccaataatattgcgtcttggttcaca A R P K Q R R P Q G L P N N I A S W F T gctctcactcagcatggcaaggaggaacttagattccctcgaggccagggcgttccaatc A L T Q H G K E E L R F P R G Q G V P I aacaccaatagtggtccagatgaccaaattggctactaccgaagagctacccgacgagtt N T N S G P D D Q I G Y Y R R A T R R V cqtqqtqqtqacqqcaaaatqaaaqqqtcaqcccaqatqqtacttctattacctaqqa R G G D G K M K E L S P R W Y F Y Y L G actggcccagaagcttcacttccctacggcgctaacaaagaaggcatcgtatgggttgca T G P E A S L P Y G A N K E G I V W V A actgagggagccttgaatacacccaaagaccacattggcacccgcaatcctaataacaat T E G A L N T P K D H I G T R N P N N N gctgccaccgtgctacaacttcctcaaggaacaacattgccaaaaggcttctacgcagag A A T V L Q L P Q G T T L P K G F Y A E ggaagcagaggcggcagtcaagcctcttctcgctcctcatcacgtagtcgcggtaattca G S R G G S Q A S S R S S S R S R G N S agaaattcaactcctggcagcagtaggggaaattctcctgctcgaatggctagcggaggt R N S T P G S S R G N S P A R M A S G G ggtgaaactgccctcgcgctattgctgctagacagattgaaccagcttgagagcaaagtt G E T A L A L L L D R L N Q L E S K V tctggtaaaggccaacaacaacaaggccaaactgtcactaagaaatctgctgctgaggca S G K G Q Q Q G Q T V T K K S A A E A tctaaaaagcctcgccaaaaacgtactgccacaaaacagtacaacgtcactcaagcattt S K K P R O K R T A T K O Y N V T O A F gggagacgtggtccagaacaaacccaaggaaatttcggggaccaagacctaatcagacaa G R R G P E O T O G N F G D O D L I R O ggaactgattacaaacattgggccgcaaattgcacaatttgcct G T D Y K H W A A N C T I C

#### 3'5' Frame 1

aggcaaattgtgcaatttgcggcccaatgtttgtaatcagttccttgtctgattaggtct R Q I V Q F A A Q C L - S V P C L I R S tggtccccgaaatttccttgggtttgttctggaccacgtctcccaaatgcttgagtgacg W S P K F P W V C S G P R L P N A - V T ttgtactgttttgtggcagtacgtttttggcgaggctttttagatgcctcagcagcagat

LYCFVAVRFWRGFLDASAAD ttcttagtgacagtttggccttgttgttgttgttgcctttaccagaaactttgctctcaagc F L V T V W P C C C W P L P E T L L S S tggttcaatctgtctagcagcaatagcgcgagggcagtttcaccacctccgctagccatt W F N L S S S N S A R A V S P P P L A I cgagcaggagaatttcccctactgctgccaggagttgaatttcttgaattaccgcgacta RAGEFPLLLPGVEFLELPRL cgtgatgaggagcgagaagaggcttgactgccgcctctgcttccctctgcgtagaagcct R D E E R E E A - L P P L L P S A - K P tttggcaatgttgttccttgaggaagttgtagcacggtggcagcattgttattaggattg FGNVVP-GSCSTVAALLLGL cgggtgccaatgtggtctttgggtgtattcaaggctccctcagttgcaacccatacgatg R V P M W S L G V F K A P S V A T H T M ccttctttgttagcgccgtagggaagtgaagcttctgggccagttcctaggtaatagaag PSLLAP-GSEASGPVPR--K taccatctggggctgagctctttcattttgccgtcaccaccacqaactcgtcgggtagct Y H L G L S S F I L P S P P R T R R V A cttcggtagtagccaatttggtcatctggaccactattggtgttgattggaacgccctgg LR--PIWSSGPLLVLIGTPW PRGNLSSSLPC-VRAVNODA atattattgggtaaaccttggggtcggcgctgttttggccttgccccattgcagtcctcc I L L G K P W G R R C F G L A P L Q S S attctggttattgtcagttgaatctgtgggtccaccaaatgtaatgcggggggcactacg I L V I V S - I C G S T K C N A G G T T ttggtttgattggggtccattatcagacattttaatttgttcgtttagagaacagatcta LV-LGSIIRHFNLFV-RTDL caagagatcgaggttggttggcttttcctgggtaggtagaaaaccta QEIEVGWLFLGR-KP

#### 3'5' Frame 2

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L A M L F L E E V V A R W Q H C Y - D C gggtgccaatgtggtctttgggtgtattcaaggctccctcagttgcaacccatacgatgc G C O C G L W V Y S R L P Q L Q P I R C cttctttqttagcqccqtagggaagtgaagcttctgggccagttcctaggtaatagaagt L L C - R R R E V K L L G Q F L G N R S accatctqqqqctqaqctctttcattttgccqtcaccaccacgaactcgtcgggtagctc TIWG-ALSFCRHHHELVG-L ttcqqtaqtaqccaatttgqtcatctggaccactattgqtgttgattggaacgccctggc FGSSQFGHLDHYWC-LERPG LEGI-VPPCHAE-EL-TKTQ tattattqqqtaaaccttqqqqtcqqcqctqttttqqccttqccccattqcaqtcctcca Y Y W V N L G V G A V L A L P H C S P P ttctqqttattqtcaqttqaatctqtqqqtccaccaaatgtaatqcqqgggggcactacgt F W L L S V E S V G P P N V M R G A L R tggtttgattggggtccattatcagacattttaatttgttcgtttagagaacagatctac W F D W G P L S D I L I C S F R E O I Y aagagatcgaggttggttggcttttcctgggtaggtaaaaaccta K. R. S R L V G F S W V G K N L

#### 3'5' Frame 3

aggcaaattgtgcaatttgcggcccaatgtttgtaatcagttccttgtctgattaggtcttg ANCAICGPMFVISSLSD-VL gtccccgaaatttccttgggtttgttctggaccacgtctcccaaatgcttgagtgacgtt V P E I S L G L F W T T S P K C L S D V qtactqttttqtgqcaqtacgttttttggcgaggctttttagatgcctcagcagcagattt V L F C G S T F L A R L F R C L S S R F cttagtgacagtttggccttgttgttgttgtcttaccagaaactttgctctcaagctg L S D S L A L L L A F T R N F A L K L gttcaatctgtctagcagcaatagcgcgagggcagtttcaccacctccgctagccattcg V O S V - Q Q - R E G S F T T S A S H S ageaggagaatttcccctactgctgccaggagttgaatttcttgaattaccgcgactacg S R R I S P T A A R S - I S - I T A T T tgatgaggaggagaagaggcttgactgccgcctctgcttccctctgcgtagaagccttt--GARRGLTAASASLCVEAF tggcaatgttgttccttgaggaagttgtagcacggtggcagcattgttattaggattgcg WOCCSLRKL-HGGSIVIRIA ggtgccaatgtggtctttgggtgtattcaaggctccctcagttgcaacccatacgatgcc G A N V V F G C I O G S L S C N P Y D A ttctttgttagcgccgtagggaagtgaagcttctgggccagttcctaggtaatagaagta F F V S A V G K - S F W A S S - V I E V ccatctggggctgagctctttcattttgccgtcaccaccacgaactcgtcgggtagctct P S G A E L F H F A V T T T N S S G S S tcqqtaqtaqccaatttqqtcatctqqaccactattqqtgttqattqqaacqccctqqcc S V V A N L V I W T T I G V D W N A L A tcgagggaatctaagttcctccttgccatgctgagtgagagctgtgaaccaagacgcaat

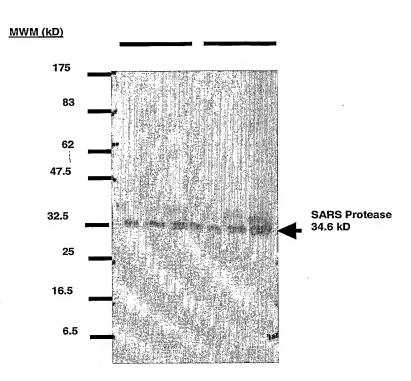
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S R E S K F L L A M L S E S C E P R R N attattgggtaaaccttggggtcggcgctgttttggccttgcccattgcagtcctcat I I G - T L G S A L F W P C P I A V L H tctggttattgtcagttgaatctgtgggtccaccaaatgtaatgcgggggggcactacgtt S G Y C Q L N L W V H Q M - C G G H Y V ggtttgattggggtccattatcagacattttaatttgttcgtttagagaacagatctaca G L I G V H Y Q T F - F V R L E N R S T agagatcgaggttggttggcttttcctgggtaggtaaaaaccta R D R G W L A F P G - V K T

FIGURE 133

**В** 



# FIGURE 134

